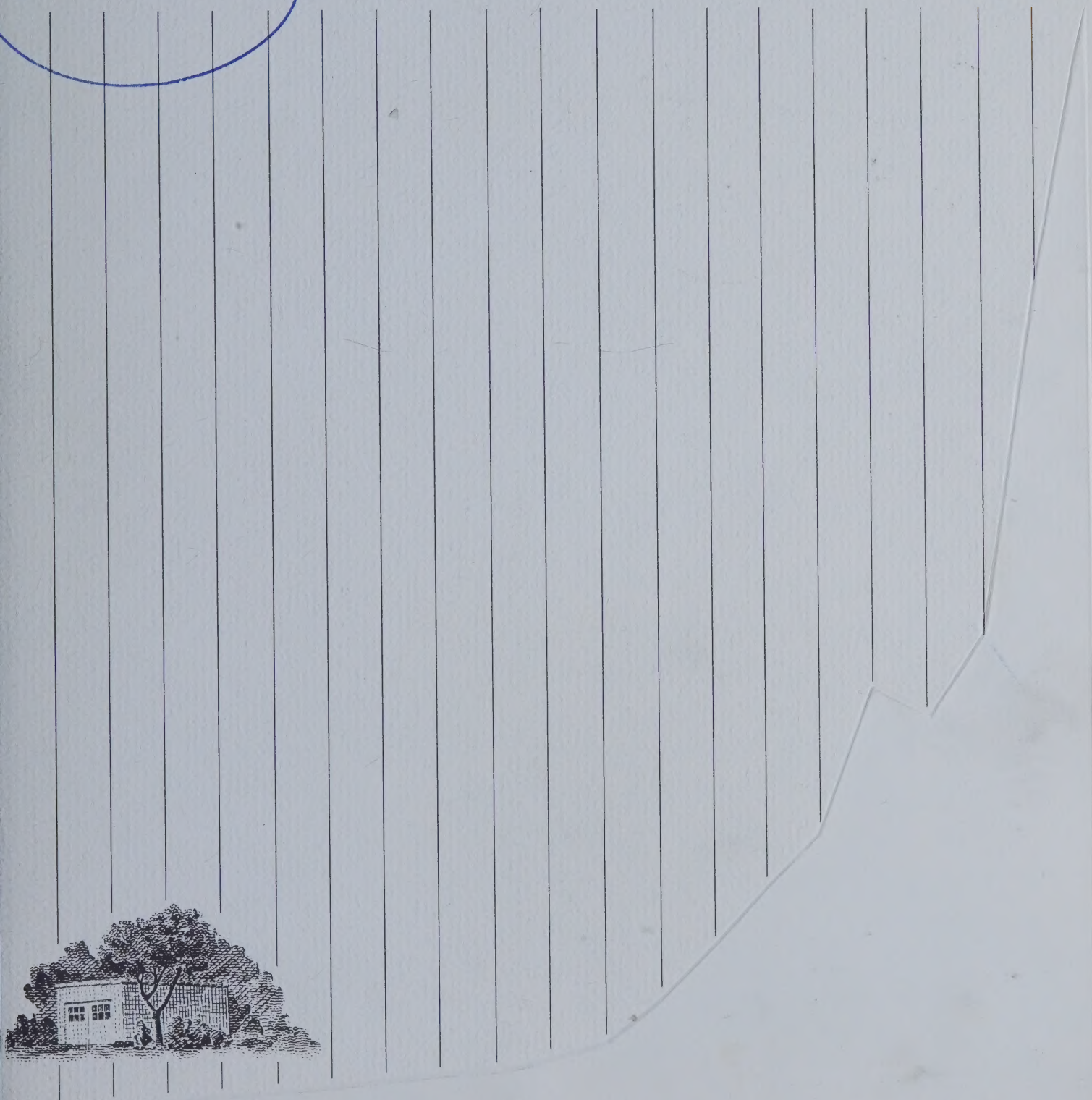


AR32

56

BOURNS, INC. ANNUAL REPORT TO THE STOCKHOLDERS FOR 1966



1946

TWENTY YEARS OF GROWTH

1966

CONTENTS

<i>Highlights of 1966</i>	2
<i>President's Message</i>	3
<i>1966 Operations</i>	4
<i>Financial Developments</i>	7
<i>Facilities</i>	8
<i>Trimpot Division</i>	10
<i>Instrument Division</i>	14
<i>Chicago Aerial Industries, Inc.</i>	18
<i>World-wide Marketing Program</i>	22
<i>Balance Sheet</i>	24
<i>Statement of Earnings</i>	26
<i>Statement of Source and Application of Funds</i>	27
<i>Condensed Comparative Financial Data</i>	28

BOARD OF DIRECTORS

MARLAN E. BOURNS, *President and Chairman of the Board, Bourns, Inc.*

JOHN E. ANDERSON, *Partner of Kindel & Anderson — General Counsel for the Company*

R. ALBERT BECK, *Vice President and Secretary-Treasurer, Bourns, Inc.*

R. R. BOURNS, *Associate Founder of the Company*

O. B. ELLINGEN, *Senior Vice President of the Security First National Bank, Los Angeles*

OFFICERS

MARLAN E. BOURNS, *President*

R. ALBERT BECK, *Vice President, Secretary-Treasurer*

GUY B. ENTREKIN, JR., *Vice President*

A. P. STUHRMAN, *Vice President*

DAWSON E. TEAFORD, *Assistant Secretary*

CORPORATE OFFICE

1200 Columbia Ave., Riverside, California

REGISTRARS

*Bank of America National Trust and Savings Association
650 South Spring Street, Los Angeles, California*

*First National City Bank
399 Park Avenue, New York, New York*

TRANSFER AGENTS

*Security First National Bank,
124 West Fourth Street, Los Angeles, California*

*The Chase Manhattan Bank (National Association)
1 Chase Manhattan Plaza, New York, New York*

AUDITORS

*Peat, Marwick, Mitchell & Co.
629 South Spring Street, Los Angeles, California*



The First Facility — Altadena, California, 1946



NEWS

FOR IMMEDIATE RELEASE

O COLUMBIA AVENUE, RIVERSIDE, CALIFORNIA 92507, PH. 714 684-1700, TWX 910 332-1252, CABLE BOURNSINC

AR32

BOURNS ANNOUNCES NEW PASSIVE NETWORKS PRODUCT LINE

Riverside, California--March 6, 1974--Bourns, Inc., the electronic industry's leading supplier of variable resistive components, announced today the introduction of a new line of Dual-In-Line and Single-In-Line packaged passive networks.

Gordon McClure, General Manager-Trimpot Products Division, Bourns, Inc., stated that the first networks products to be offered are a group of six resistor network types commonly used in IC logic circuits for pull-up, pull-down, line terminating, current limiting and impedance balancing applications.

According to Mr. McClure, the new resistor network products utilize a proprietary thick-film resistor ink system that provides generally better temperature coefficient and power handling performance than previously available in standard products.

"The performance of Bourns networks has been verified through an exhaustive program of design qualification and life testing", Mr. McClure said, "the designs have been qualified to both MIL-STD-883 and MIL-R-83401.

"Futhermore," McClure added, "we have placed particular emphasis on verification of the integrity of our dual-in-line package during typical component assembly conditions, as well as subsequent powered operation."

- page two -

The six resistor networks models (14 and 16-pin DIPs and 8-pin SIPs) are available off-the-shelf in standard resistances from 33 ohms to 220,000 ohms. Prices for DIP networks begin at 51¢ each, SIP networks at 25¢ each, in production quantities.

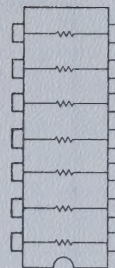
Requirements for non-standard values, special schematics, special performance specifications, etc., will be welcomed, said McClure.

Additional standard network models are scheduled for release later this year.

For complete details contact your local Bourns sales office or representative . . . or contact the Factory direct -- Bourns, Inc., 1200 Columbia Avenue, Riverside, California 92507.

The Model 4114R Resistor Network is a product of Bourns many years of experience in thick film technology. The design has been thoroughly tested to meet Bourns uncompromising standards as to product life and environmental performance. The Model 4114R-001 is a standard 14 pin DIP packaged network with a configuration of 7 isolated thick film resistors of equal value.

Typical applications include power gate pull-up, impedance balancing, current limiting, line termination and ECL output pull-down. Replaces the Allen-Bradley 34B, Beckman 899-3, Centralab MEC-2, CTS 760-3 and Sprague 914C-SR.



MODEL 4114R-001

14 PIN DUAL-IN-LINE PACKAGE
7 ISOLATED RESISTORS

FEATURES

- Reduces P.C. board space
- Reduces total assembly costs
- Standard DIP package is compatible with automatic insertion equipment
- Uniform performance characteristics
- Compatible with IC logic circuit environments

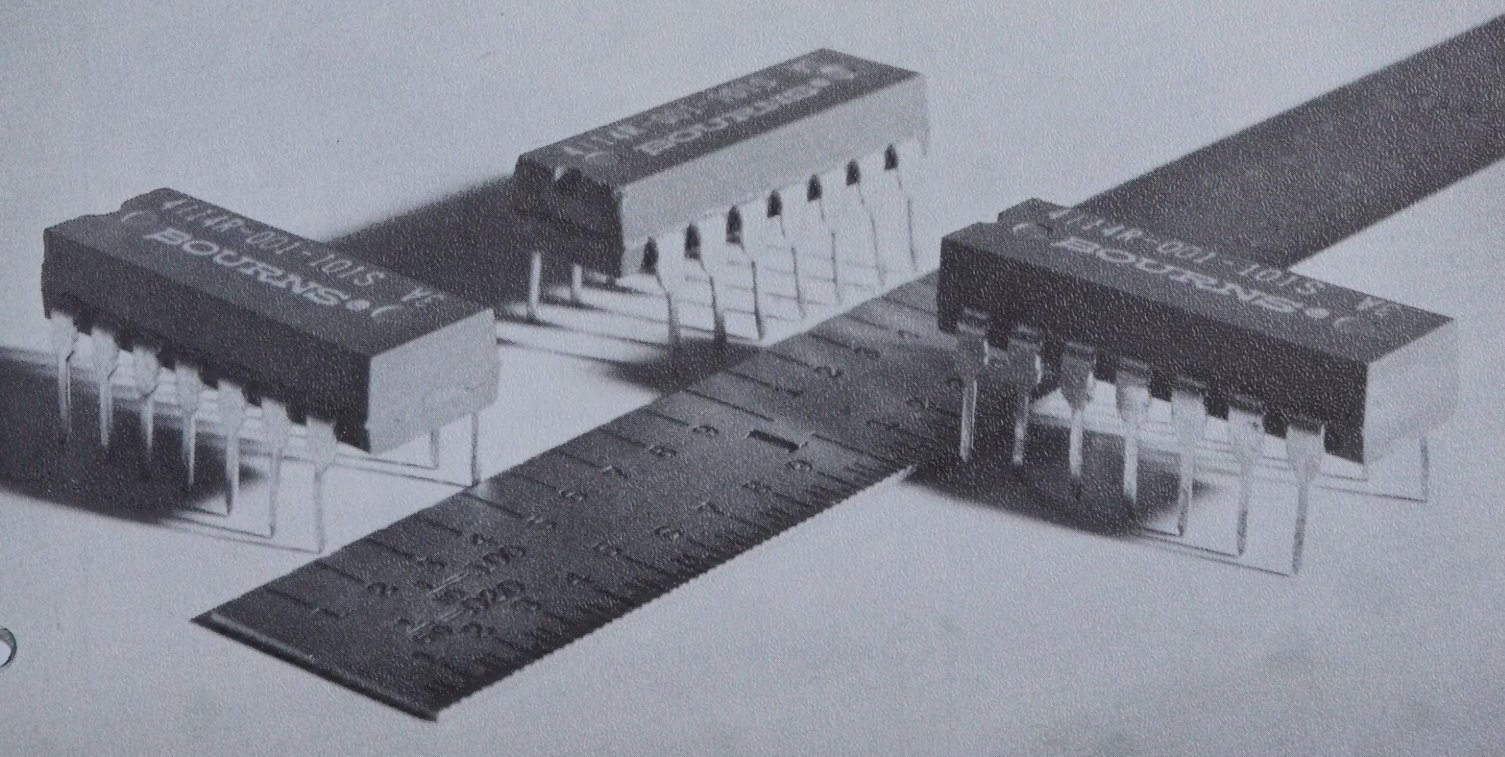
STANDARD RESISTANCES

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
33	4114R-001-330S	330	4114R-001-331S
39	4114R-001-390S	390	4114R-001-391S
47	4114R-001-470S	470	4114R-001-471S
56	4114R-001-560S	560	4114R-001-561S
68	4114R-001-680S	680	4114R-001-681S
82	4114R-001-820S	820	4114R-001-821S
100	4114R-001-101S	1000	4114R-001-102S
120	4114R-001-121S	1200	4114R-001-122S
150	4114R-001-151S	1500	4114R-001-152S
180	4114R-001-181S	1800	4114R-001-182S
220	4114R-001-221S	2200	4114R-001-222S
270	4114R-001-271S	2700	4114R-001-272S

STANDARD RESISTANCE TOLERANCE IS $\pm 2\%$, SPECIAL TOLERANCES TO $\pm 0.5\%$ ARE AVAILABLE
SUFFIX DESIGNATES TOLERANCE — S $\pm 2\%$, H $\pm 5\%$, A $\pm 10\%$, B $\pm 20\%$

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
3300	4114R-001-332S	33000	4114R-001-333S
3900	4114R-001-392S	39000	4114R-001-393S
4700	4114R-001-472S	47000	4114R-001-473S
5600	4114R-001-562S	56000	4114R-001-563S
6800	4114R-001-682S	68000	4114R-001-683S
8200	4114R-001-822S	82000	4114R-001-823S
10000	4114R-001-103S	100000	4114R-001-104S
12000	4114R-001-123S	120000	4114R-001-124S
15000	4114R-001-153S	150000	4114R-001-154S
18000	4114R-001-183S	180000	4114R-001-184S
22000	4114R-001-223S	220000	4114R-001-224S
27000	4114R-001-273S		

SPECIAL RESISTANCES FROM 10 OHMS TO 1 MEGOHM ARE AVAILABLE.



ELECTRICAL SPECIFICATIONS

Resistance Range 33Ω to $220K\Omega$ Standard, 10Ω to 1 Meg Ω Special
 Resistance Tolerance $\pm 2\%$ Standard, to $\pm .5\%$ Special
 Power Rating (See Operating Curve)
 Total Package (25°C) 2.0 Watts
 Single Resistor (25°C) 0.25 Watts
 Short Time Overload (2.5 x Rated Voltage, 5 sec) . . $\pm 0.25\%$ Max. ΔR
 Resistance Temperature Coefficient
 (—55°C to +125°C) ± 100 PPM/°C Max.
 Resistance Temperature Coefficient Tracking 50 PPM/°C Max.
 Resistance Voltage Coefficient 50 PPM/Volt Max.
 Operating Temperature Range —55°C to +125°C

ENVIRONMENTAL SPECIFICATIONS

Thermal Shock $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1011, Cond. B, 15 Cycles)
 Resistance to Soldering Heat $\pm 0.25\%$ Max. ΔR
 (MIL-STD-202E, Method 210A, Cond. C, Procedure 2)
 Mechanical Shock (500G's, 0.5 ms) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2002, Cond. A)
 Vibration (20 G's, .06 DA, 20 to 2KHz) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2007, Cond. A)
 Terminal Strength $\pm 0.25\%$ Max. ΔR
 (MIL-R-83401A)
 Moisture Resistance $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1004, 0.1 x rated pwr,
 delete 3.1A & B, 3.4, 3.6.1)
 Load-Life (70°C, 1000 Hrs. @ rated pwr.) $\pm 1.0\%$ Max. ΔR
 (MIL-STD-883, Method 1005, Cond. "B")
 Solvent Resistance Legible markings and no Mechanical damage
 (MIL-STD-202E, Method 215)

MECHANICAL SPECIFICATIONS

Body Material Molded Epoxy
 Lead Material Tin Plated Copper Alloy
 Lead Solderability Meets requirements of MIL-STD-202E,
 Method 208 and MIL-STD-883, Method 2003.
 Weight 1.3 grams

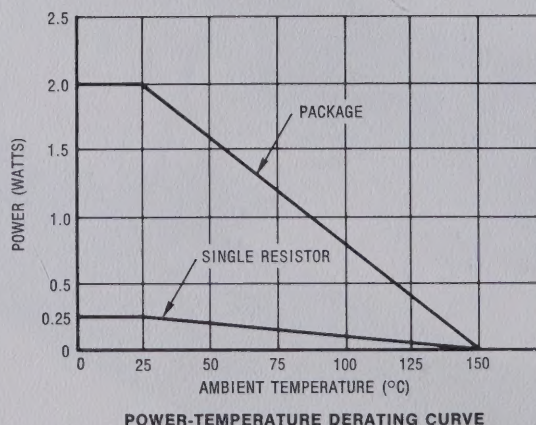
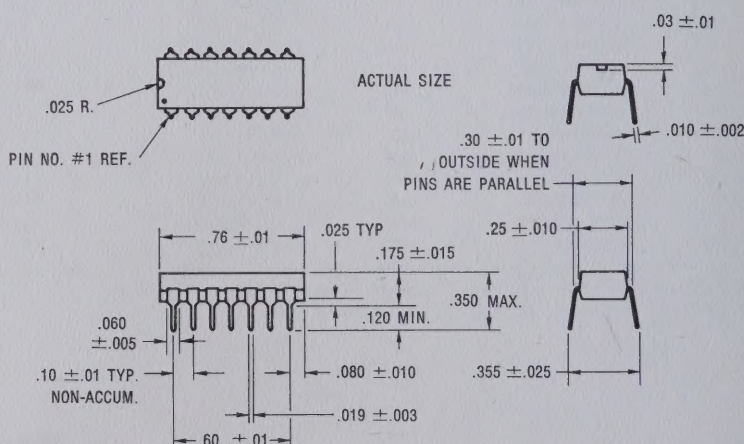
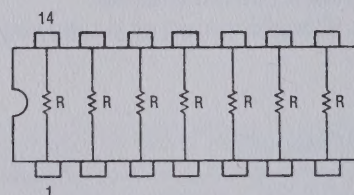
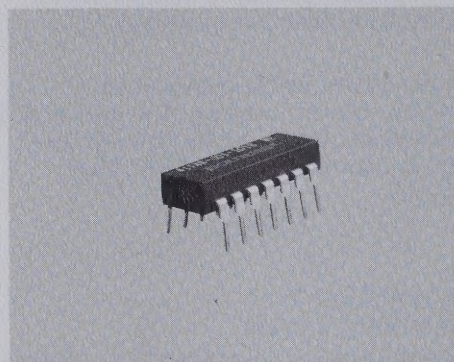
BASIC PRICES

1 - 99 — \$1.25 ea.
 100 - 499 — \$.99 ea.
 500 - 999 — \$.84 ea.

For larger quantity pricing, contact your Bourns representative or distributor . . . or contact the factory direct.

14 PIN DUAL-IN-LINE PACKAGE 7 ISOLATED RESISTORS

MODEL 4114R-001



INCHES	MILLIMETERS
.005	.127
.010	.254
.015	.381
.019	.483
.020	.508
.025	.635
.030	.762
.060	1.524
.080	2.032
.100	2.540
.120	3.048
.175	4.445
.250	6.350
.300	7.620
.350	8.890
.355	9.017
.600	15.240
.760	19.304

SPECIAL NETWORKS

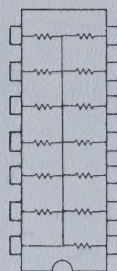
Networks with modified schematics are available for special applications. If a stock network does not meet your requirements contact your Bourns representative.



TRIMPOT PRODUCTS DIVISION
 1200 COLUMBIA AVENUE
 RIVERSIDE, CALIFORNIA 92507
 PHONE 714 684-1700

The Model 4114R Resistor Network is a product of Bourns many years of experience in thick film technology. The design has been thoroughly tested to meet Bourns uncompromising standards as to product life and environmental performance. The Model 4114R-002 is a standard 14 pin DIP packaged network with a configuration of 13 thick film resistors of equal value with pin 14 common.

Typical applications include open collector pull-up, parallel pull-up, wired OR pull-up, TTL input pull-down, MOS Memory pull-up and pull-down, unused gate pull-up, power driver pull-up. Replaces the Allen-Bradley 34A, Beckman 899-1, Centralab MEC-1, CTS 760-1 and Sprague 914C-PE.



MODEL 4114R-002

14 PIN DUAL-IN-LINE PACKAGE
13 RESISTORS, PIN 14 COMMON

FEATURES

- Reduces P.C. board space
- Reduces total assembly costs
- Standard DIP package is compatible with automatic insertion equipment
- Uniform performance characteristics
- Compatible with IC logic circuit environments

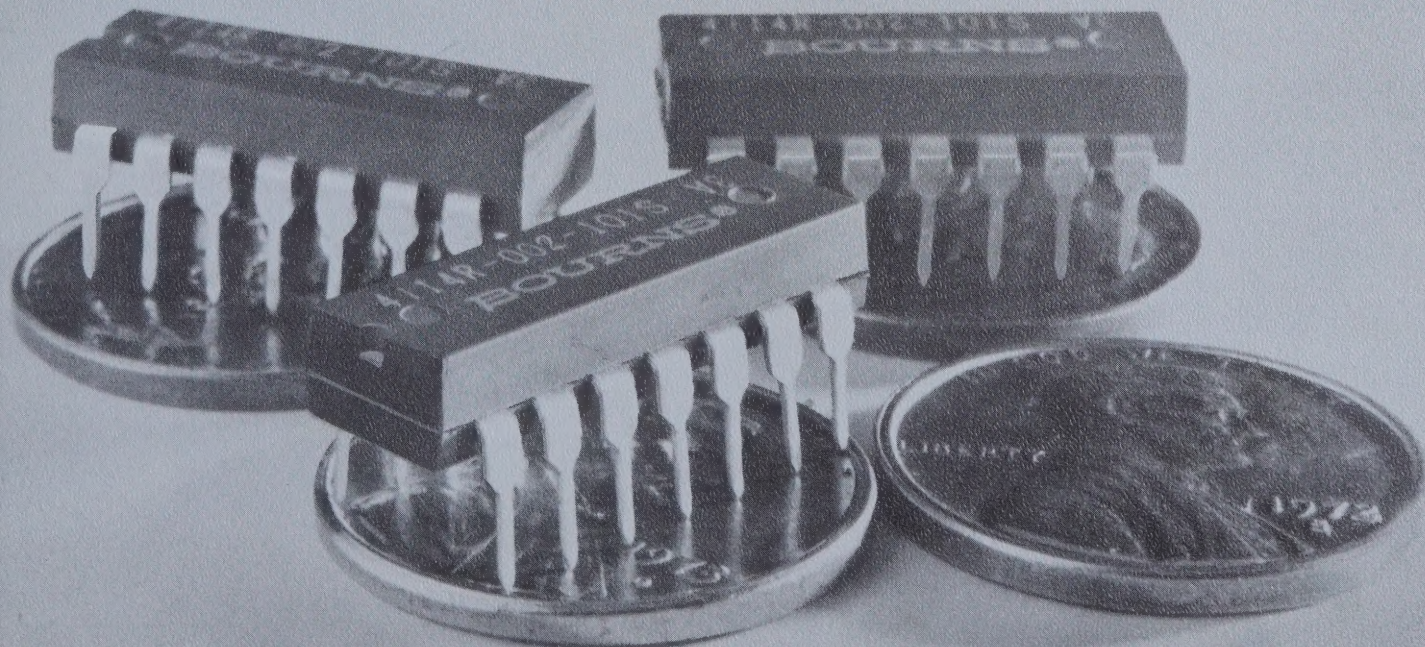
STANDARD RESISTANCES

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
33	4114R-002-330S	330	4114R-002-331S
39	4114R-002-390S	390	4114R-002-391S
47	4114R-002-470S	470	4114R-002-471S
56	4114R-002-560S	560	4114R-002-561S
68	4114R-002-680S	680	4114R-002-681S
82	4114R-002-820S	820	4114R-002-821S
100	4114R-002-101S	1000	4114R-002-102S
120	4114R-002-121S	1200	4114R-002-122S
150	4114R-002-151S	1500	4114R-002-152S
180	4114R-002-181S	1800	4114R-002-182S
220	4114R-002-221S	2200	4114R-002-222S
270	4114R-002-271S	2700	4114R-002-272S

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
3300	4114R-002-332S	33000	4114R-002-333S
3900	4114R-002-392S	39000	4114R-002-393S
4700	4114R-002-472S	47000	4114R-002-473S
5600	4114R-002-562S	56000	4114R-002-563S
6800	4114R-002-682S	68000	4114R-002-683S
8200	4114R-002-822S	82000	4114R-002-823S
10000	4114R-002-103S	100000	4114R-002-104S
12000	4114R-002-123S	120000	4114R-002-124S
15000	4114R-002-153S	150000	4114R-002-154S
18000	4114R-002-183S	180000	4114R-002-184S
22000	4114R-002-223S	220000	4114R-002-224S
27000	4114R-002-273S		

STANDARD RESISTANCE TOLERANCE IS $\pm 2\%$, SPECIAL TOLERANCES TO $\pm 0.5\%$ ARE AVAILABLE
SUFFIX DESIGNATES TOLERANCE — S $\pm 2\%$, H $\pm 5\%$, A $\pm 10\%$, B $\pm 20\%$

SPECIAL RESISTANCES FROM 10 OHMS TO 1 MEGOHM ARE AVAILABLE.



PERFORMANCE SPECIFICATIONS

Resistance Range 33 Ω to 220K Ω Standard, 10 Ω to 1 Meg Ω Special
 Resistance Tolerance $\pm 2\%$ Standard, to $\pm .5\%$ Special
 Power Rating (See Operating Curve)
 Total Package (25°C) 2.0 Watts
 Single Resistor (25°C)125 Watts
 Short Time Overload (2.5 x Rated Voltage, 5 sec) . . $\pm 0.25\%$ Max. ΔR
 Resistance Temperature Coefficient
 (—55°C to +125°C) ± 100 PPM/°C Max.
 Resistance Temperature Coefficient Tracking 50 PPM/°C Max.
 Resistance Voltage Coefficient 50 PPM/Volt. Max.
 Operating Temperature Range —55°C to +125°C

ENVIRONMENTAL SPECIFICATIONS

Thermal Shock $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1011, Cond. B, 15 Cycles)
 Resistance to Soldering Heat $\pm 0.25\%$ Max. ΔR
 (MIL-STD-202E, Method 210A, Cond. C, Procedure 2)
 Mechanical Shock (500G's, 0.5 ms) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2002, Cond. A)
 Vibration (20 G's, .06 DA, 20 to 2KHz) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2007, Cond. A)
 Terminal Strength $\pm 0.25\%$ Max. ΔR
 (MIL-R-83401A)
 Moisture Resistance $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1004, 0.1 x rated pwr,
 delete 3.1A & B, 3.4, 3.6.1)
 Load-Life (70°C, 1000 Hrs. @ rated pwr.) $\pm 1.0\%$ Max. ΔR
 (MIL-STD-883, Method 1005, Cond. "B")
 Solvent Resistance Legible markings and no mechanical damage
 (MIL-STD-202E, Method 215)

MECHANICAL SPECIFICATIONS

Body Material Molded Epoxy
 Lead Material Tin Plated Copper Alloy
 Lead Solderability Meets requirements of MIL-STD-202E,
 Method 208 and MIL-STD 883, Method 2003.
 Weight 1.3 Grams

BASIC PRICES

1 - 99 — \$1.45 ea.
 100 - 499 — \$1.15 ea.
 500 - 999 — \$.97 ea.

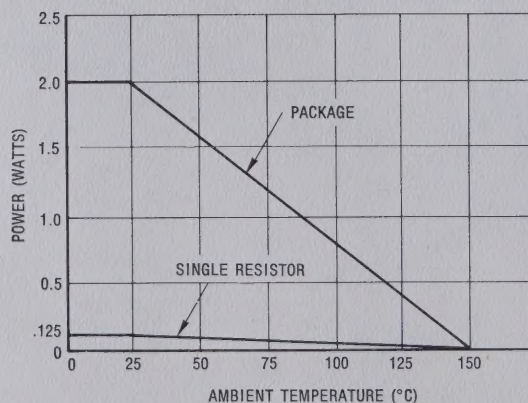
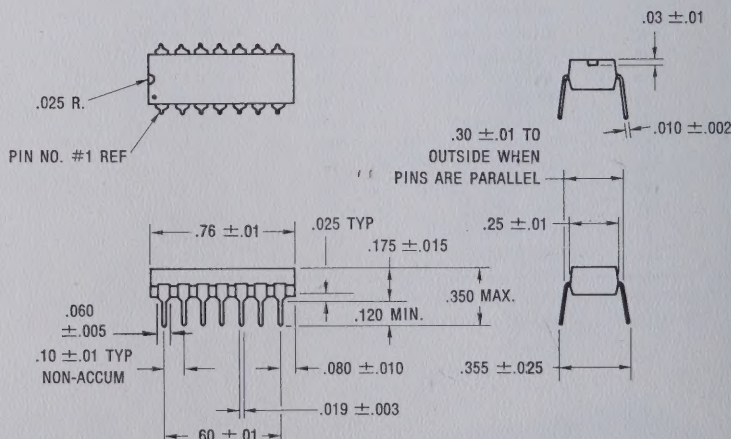
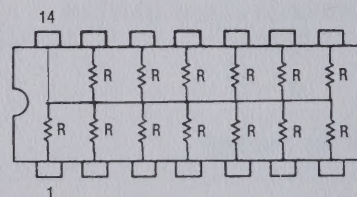
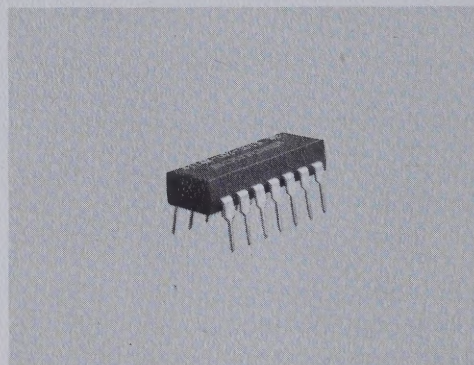
For larger quantity pricing, contact your Bourns representative or distributor . . . or contact the factory direct.



TRIMPOT PRODUCTS DIVISION
 1200 COLUMBIA AVENUE
 RIVERSIDE, CALIFORNIA 92507
 PHONE 714 684-1700

14 PIN DUAL-IN-LINE PACKAGE 13 RESISTORS, PIN 14 COMMON

MODEL 4114R-002



POWER-TEMPERATURE DERATING CURVE

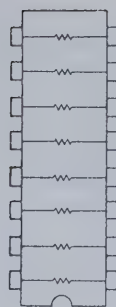
INCHES	MILLIMETERS
.005	.127
.010	.254
.015	.381
.019	.483
.020	.508
.025	.635
.030	.762
.080	2.032
.100	2.54
.120	3.048
.175	4.445
.250	6.35
.300	7.62
.350	8.890
.355	9.017
.700	17.78
.860	21.844

SPECIAL NETWORKS

Networks with modified schematics are available for special applications. If a stock network does not meet your requirements contact your Bourns representative.

The Model 4116R Resistor Network is a product of Bourns many years of experience in thick film technology. The design has been thoroughly tested to meet Bourns uncompromising standards as to product life and environmental performance. The Model 4116R-001 is a standard 16 pin DIP packaged network with a configuration of 8 isolated thick film resistors of equal value.

Typical applications include power gate pull-up, impedance balancing, current limiting, line termination and ECL output pull-down. Replaces the Beckman 898-3, Dale FDP-16, Mepco D16H and Sprague 916C-SR.



MODEL 4116R-001

16 PIN DUAL-IN-LINE PACKAGE
8 ISOLATED RESISTORS

FEATURES

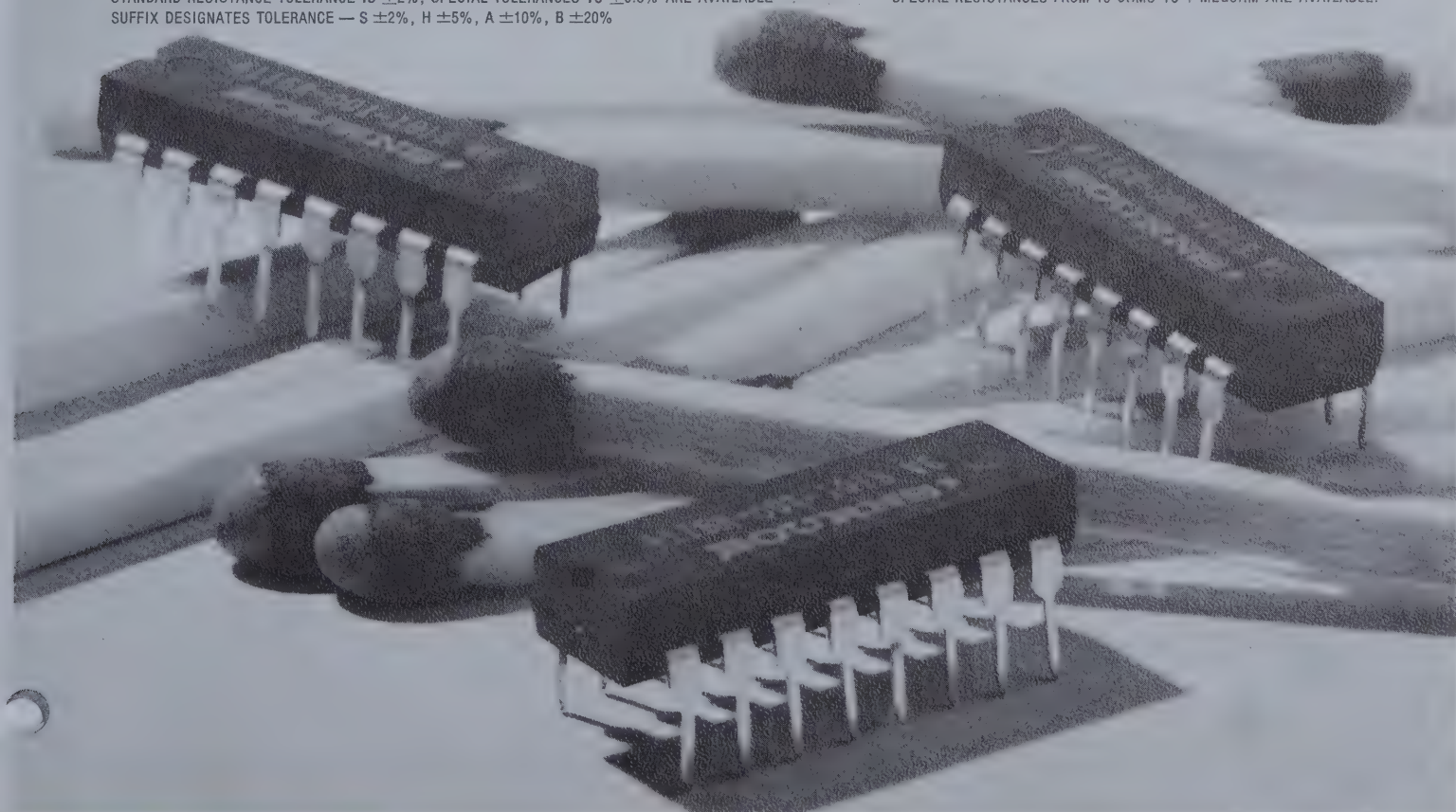
- Reduces P.C. board space
- Reduces total assembly costs
- Standard DIP package is compatible with automatic insertion equipment
- Uniform performance characteristics
- Compatible with IC logic circuit environments

STANDARD RESISTANCES

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number	Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
33	4116R-001-330S	330	4116R-001-331S	3300	4116R-001-332S	33000	4116R-001-333S
39	4116R-001-390S	390	4116R-001-391S	3900	4116R-001-392S	39000	4116R-001-393S
47	4116R-001-470S	470	4116R-001-471S	4700	4116R-001-472S	47000	4116R-001-473S
56	4116R-001-560S	560	4116R-001-561S	5600	4116R-001-562S	56000	4116R-001-563S
68	4116R-001-680S	680	4116R-001-681S	6800	4116R-001-682S	68000	4116R-001-683S
82	4116R-001-820S	820	4116R-001-821S	8200	4116R-001-822S	82000	4116R-001-823S
100	4116R-001-101S	1000	4116R-001-102S	10000	4116R-001-103S	100000	4116R-001-104S
120	4116R-001-121S	1200	4116R-001-122S	12000	4116R-001-123S	120000	4116R-001-124S
150	4116R-001-151S	1500	4116R-001-152S	15000	4116R-001-153S	150000	4116R-001-154S
180	4116R-001-181S	1800	4116R-001-182S	18000	4116R-001-183S	180000	4116R-001-184S
220	4116R-001-221S	2200	4116R-001-222S	22000	4116R-001-223S	220000	4116R-001-224S
270	4116R-001-271S	2700	4116R-001-272S	27000	4116R-001-273S		

STANDARD RESISTANCE TOLERANCE IS $\pm 2\%$, SPECIAL TOLERANCES TO $\pm 0.5\%$ ARE AVAILABLE
SUFFIX DESIGNATES TOLERANCE — S $\pm 2\%$, H $\pm 5\%$, A $\pm 10\%$, B $\pm 20\%$

SPECIAL RESISTANCES FROM 10 OHMS TO 1 MEGOHM ARE AVAILABLE.



PERFORMANCE SPECIFICATIONS

Resistance Range 33 Ω to 220K Ω Standard, 10 Ω to 1 Meg Ω Special
 Resistance Tolerance $\pm 2\%$ standard, to $\pm 5\%$ special
 Power Rating (See Operating Curve)
 Total Package (25°C) 2.25 Watts
 Single Resistor (25°C) 0.25 Watts
 Short Time Overload (2.5 x Rated Voltage, 5 sec) . . $\pm 0.25\%$ Max. ΔR
 Resistance Temperature Coefficient
 (—55°C to +125°C) ± 100 PPM/°C Max.
 Resistance Temperature Coefficient Tracking 50 PPM/°C Max.
 Resistance Voltage Coefficient 50 PPM/Volt Max.
 Operating Temperature Range —55°C to +125°C

ENVIRONMENTAL SPECIFICATIONS

Thermal Shock $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1011, Cond. B, 15 Cycles)
 Resistance to Soldering Heat $\pm 0.25\%$ Max. ΔR
 (MIL-STD-202E, Method 210A, Cond. C, Procedure 2)
 Mechanical Shock (500G's, 0.5 ms) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2002, Cond. A)
 Vibration (20 G's, .06 DA, 20 to 2KHz) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2007, Cond. A)
 Terminal Strength $\pm 0.25\%$ Max. ΔR
 (MIL-R-83401A)
 Moisture Resistance $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1004, 0.1 x rated pwr,
 Delete 3.1A & B, 3.4, 3.6.1)
 Load-Life (70°C, 1000 Hrs. @ rated pwr.) $\pm 1.0\%$ Max. ΔR
 (MIL-STD-883, Method 1005, Cond. "B")
 Solvent Resistance Legible markings and no mechanical damage
 (MIL-STD-202E, Method 215)

MECHANICAL SPECIFICATIONS

Body Material Molded Epoxy
 Lead Material Tin Plated Copper Alloy
 Lead Solderability Meets requirements of MIL-STD-202E,
 method 208 and MIL-STD-883, method 2003.
 Weight 1.5 Grams

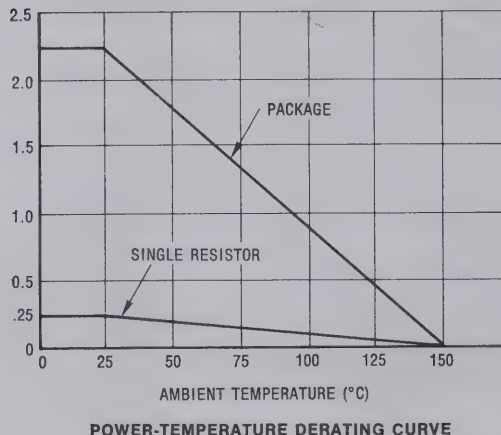
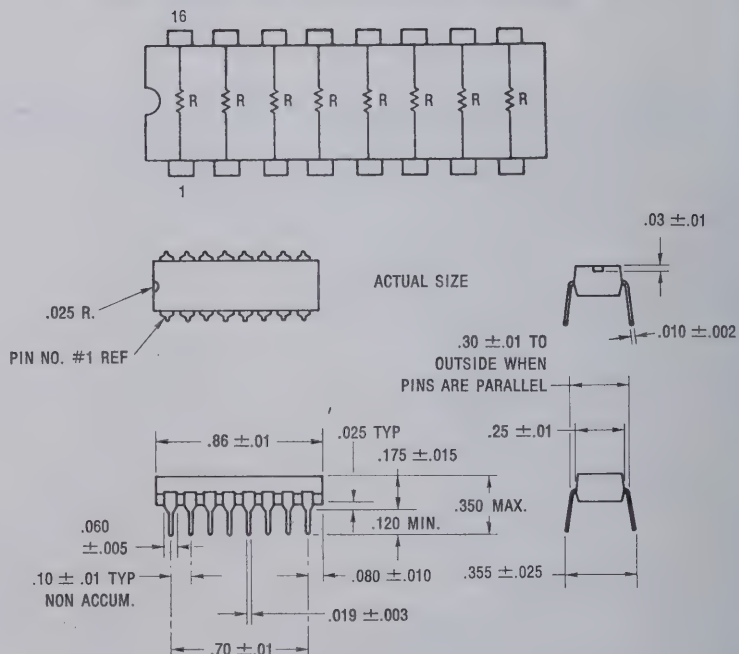
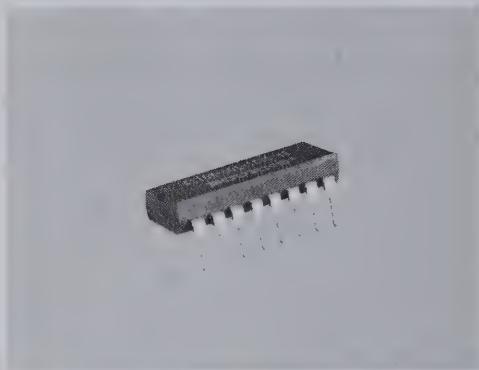
BASIC PRICES

1 - 99 — \$1.31 ea.
 100 - 499 — \$1.03 ea.
 500 - 999 — \$.97 ea.

For larger quantity pricing, contact your Bourns representative or distributor . . . or contact the factory direct.

16 PIN DUAL-IN-LINE PACKAGE 8 ISOLATED RESISTORS

MODEL 4116R-001



INCHES	MILLIMETERS
.005	.127
.010	.254
.015	.381
.019	.483
.020	.508
.025	.635
.030	.762
.080	2.032
.100	2.54
.120	3.048
.175	4.445
.250	6.35
.300	7.62
.350	8.890
.355	9.017
.700	17.78
.860	21.844

SPECIAL NETWORKS

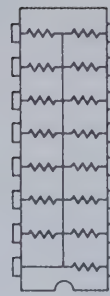
Networks with modified schematics are available for special applications. If a stock network does not meet your requirements contact your Bourns representative.



TRIMPOT PRODUCTS DIVISION
 1200 COLUMBIA AVENUE
 RIVERSIDE, CALIFORNIA 92507
 PHONE 714 684-1700

The Model 4116R Resistor Network is a product of Bourns many years of experience in thick film technology. The design has been thoroughly tested to meet Bourns uncompromising standards as to product life and environmental performance. The Model 4116R-002 is a standard 16 pin DIP packaged network with a configuration of 15 thick film resistors of equal value with pin 16 common.

Typical applications include open collector pull-up, parallel pull-up, wired OR pull-up, TTL input pull-down, MOS Memory pull-up, and pull-down, unused gate pull-up, power driver pull-up. Replaces the Beckman 898-1, Dale FDP-16, Mepco D160 & Sprague 916C-PE.



MODEL 4116R-002

16 PIN DUAL-IN-LINE PACKAGE
15 RESISTORS, PIN 16 COMMON

FEATURES

- Reduces P.C. board space
- Reduces total assembly costs
- Standard DIP package is compatible with automatic insertion equipment
- Uniform performance characteristics
- Compatible with IC logic circuit environments

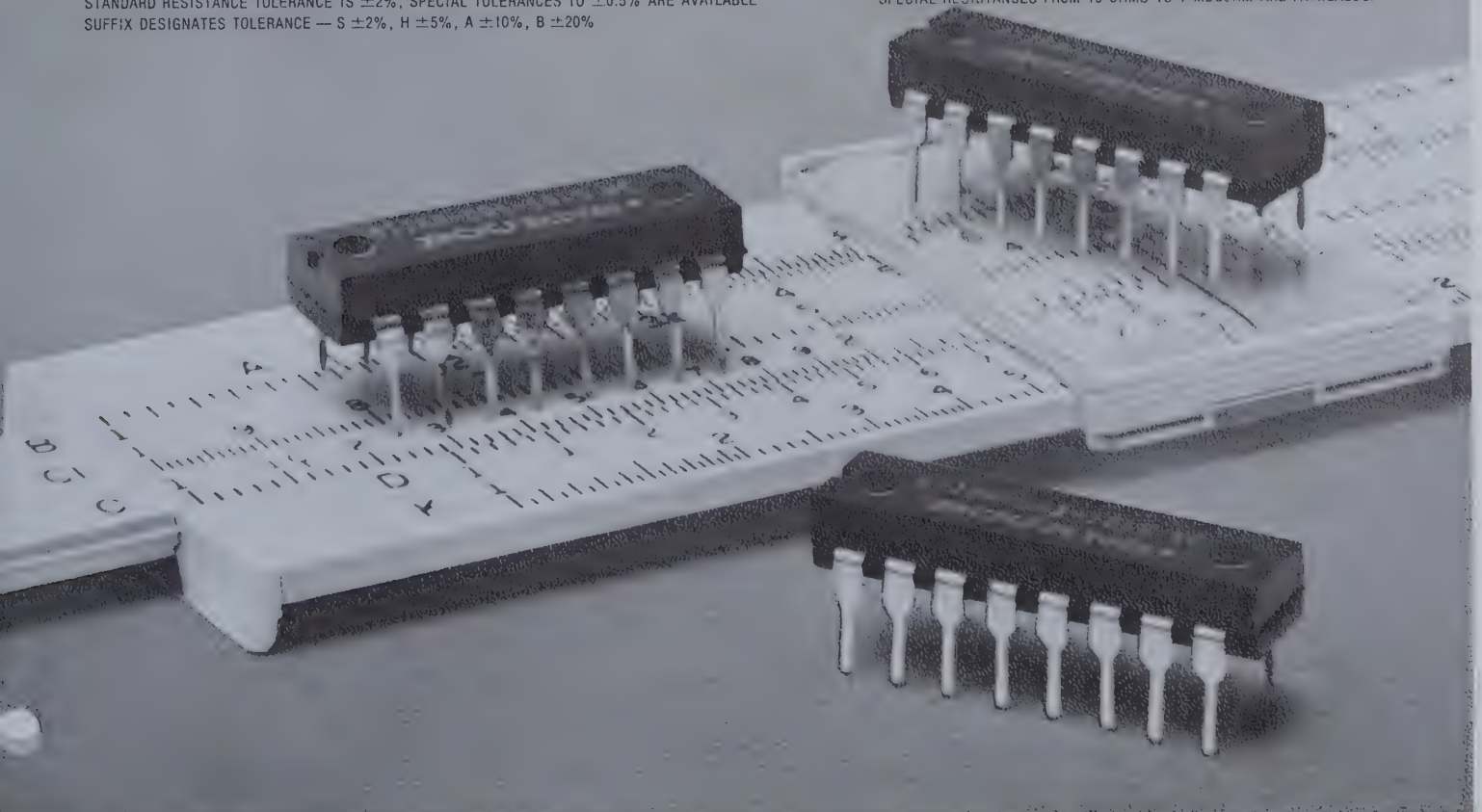
STANDARD RESISTANCES

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
33	4116R-002-330S	330	4116R-002-331S
39	4116R-002-390S	390	4116R-002-391S
47	4116R-002-470S	470	4116R-002-471S
56	4116R-002-560S	560	4116R-002-561S
68	4116R-002-680S	680	4116R-002-681S
82	4116R-002-820S	820	4116R-002-821S
100	4116R-002-101S	1000	4116R-002-102S
120	4116R-002-121S	1200	4116R-002-122S
150	4116R-002-151S	1500	4116R-002-152S
180	4116R-002-181S	1800	4116R-002-182S
220	4116R-002-221S	2200	4116R-002-222S
270	4116R-002-271S	2700	4116R-002-272S

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
3300	4116R-002-332S	33000	4116R-002-333S
3900	4116R-002-392S	39000	4116R-002-393S
4700	4116R-002-472S	47000	4116R-002-473S
5600	4116R-002-562S	56000	4116R-002-563S
6800	4116R-002-682S	68000	4116R-002-683S
8200	4116R-002-822S	82000	4116R-002-823S
10000	4116R-002-103S	100000	4116R-002-104S
12000	4116R-002-123S	120000	4116R-002-124S
15000	4116R-002-153S	150000	4116R-002-154S
18000	4116R-002-183S	180000	4116R-002-184S
22000	4116R-002-223S	220000	4116R-002-224S
27000	4116R-002-273S		

STANDARD RESISTANCE TOLERANCE IS $\pm 2\%$. SPECIAL TOLERANCES TO $\pm 0.5\%$ ARE AVAILABLE
SUFFIX DESIGNATES TOLERANCE — S $\pm 2\%$, H $\pm 5\%$, A $\pm 10\%$, B $\pm 20\%$

SPECIAL RESISTANCES FROM 10 OHMS TO 1 MEGOHM ARE AVAILABLE.



PERFORMANCE SPECIFICATIONS

Resistance Range 33 Ω to 220K Ω Standard, 10 Ω to 1 Meg Ω Special
 Resistance Tolerance $\pm 2\%$ standard, to $\pm .5\%$ special
 Power Rating (See Operating Curve)
 Total Package (25°C) 2.25 Watts
 Single Resistor (25°C) 0.125 Watts
 Short Time Overload (2.5 x Rated Voltage, 5 sec) .. $\pm 0.25\%$ Max. ΔR
 Resistance Temperature Coefficient
 (—55°C to +125°C) ± 100 PPM/°C Max.
 Resistance Temperature Coefficient Tracking 50 PPM/°C Max.
 Resistance Voltage Coefficient 50 PPM/Volt Max.
 Operating Temperature Range —55°C to +125°C

ENVIRONMENTAL SPECIFICATIONS

Thermal Shock $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1011, Cond. B, 15 Cycles)
 Resistance to Soldering Heat $\pm 0.25\%$ Max. ΔR
 (MIL-STD-202E, Method 210A, Cond. C, Procedure 2)
 Mechanical Shock (500G's, 0.5 ms) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2002, Cond. A)
 Vibration (20 G's, .06 DA, 20 to 2KHz) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2007, Cond. A)
 Terminal Strength $\pm 0.25\%$ Max. ΔR
 (MIL-R-83491A)
 Moisture Resistance $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1004, 0.1 x rated pwr,
 delete 3.1A & B, 3.4, 3.6.1)
 Load-Life (70°C, 1000 Hrs. @ rated pwr.) $\pm 1.0\%$ Max. ΔR
 (MIL-STD-883, Method 1005, Cond. "B")
 Solvent Resistance Legible markings and no mechanical damage.
 (MIL-STD-202E, Method 215)

MECHANICAL SPECIFICATIONS

Body Material Molded Epoxy
 Lead Material Tin Plated Copper Alloy
 Lead Solderability Meets requirements of MIL-STD-202E,
 method 208 and MIL-STD-883, Method 2003.
 Weight 1.5 Grams

BASIC PRICES

1 - 99 — \$1.52 ea.
 100 - 499 — \$1.20 ea.
 500 - 999 — \$1.02 ea.

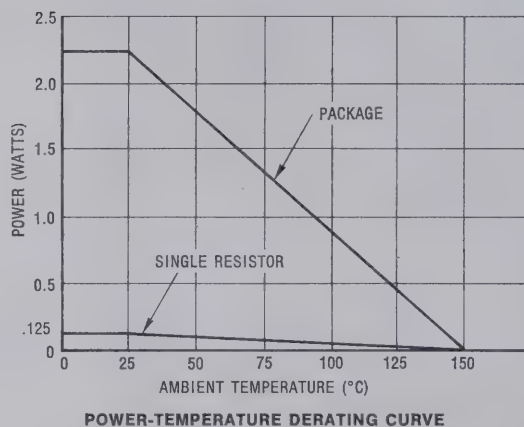
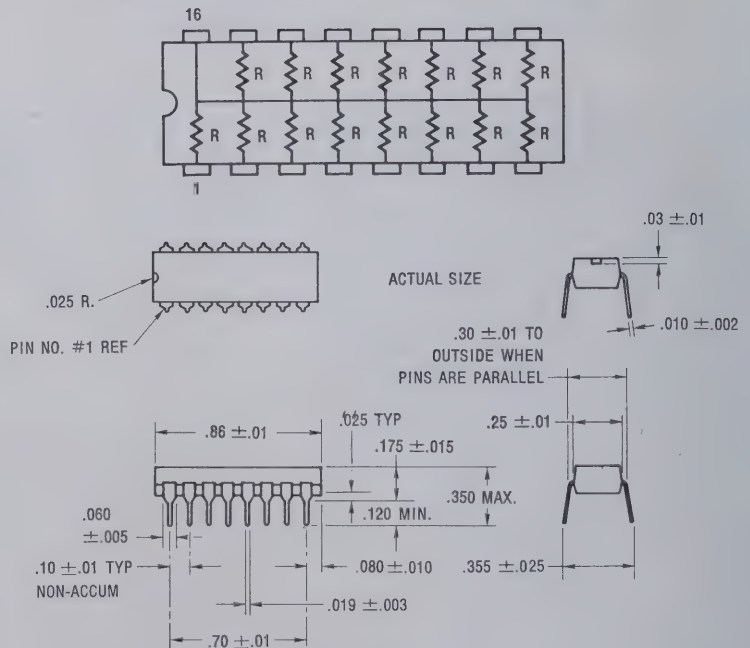
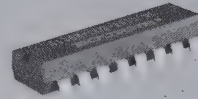
For larger quantity pricing, contact your Bourns representative or distributor ... or contact the factory direct.



TRIMPOT PRODUCTS DIVISION
 1200 COLUMBIA AVENUE
 RIVERSIDE, CALIFORNIA 92507
 PHONE 714 684-1700

16 PIN DUAL-IN-LINE PACKAGE 15 RESISTORS, PIN 16 COMMON

MODEL 4116R-002



INCHES	MILLIMETERS
.005	.127
.010	.254
.015	.381
.019	.483
.020	.508
.025	.635
.030	.762
.080	2.032
.100	2.54
.120	3.048
.175	4.445
.250	6.35
.300	7.62
.350	8.890
.355	9.017
.700	17.78
.860	21.844

SPECIAL NETWORKS

Networks with modified schematics are available for special applications. If a stock network does not meet your requirements contact your Bourns representative.

The Model 4308R-001 Resistor Network is a product of Bourns' many years of experience in thick film technology. The design has been thoroughly tested to meet Bourns' uncompromising standards as to product life and environmental performance. The Model 4308R-001 is a standard 8 Pin SIP packaged network with a configuration of 7 thick film resistors of equal value, pin 1 common.

Typical applications include open collector pull-up, parallel pull-up, wired OR pull-up, TTL input pull-down, MOS memory pull-up and pull-down, unused gate pull-up, power driver pull-up. Replaces CTS 750, Dale SIP 8 and Sprague 216C.



MODEL 4308R-001

8 PIN SINGLE-IN-LINE PACKAGE
7 RESISTORS, PIN 1 COMMON

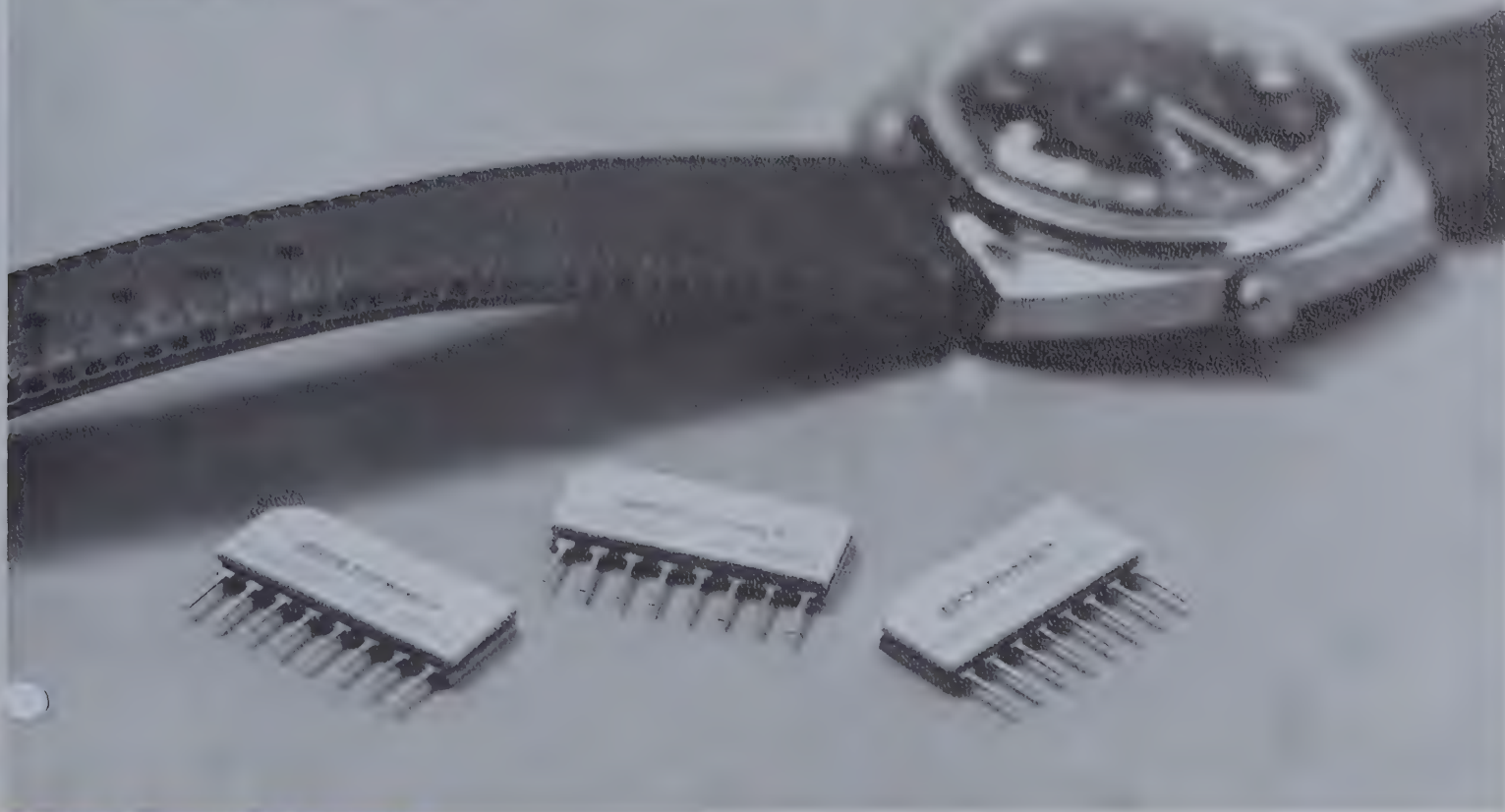
FEATURES

- Reduces P.C. board space
- Reduces total assembly costs
- Standard package is compatible with automatic insertion equipment
- Uniform performance characteristics
- Compatible with IC logic circuit environments

STANDARD RESISTANCES

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number	Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
33	4308R-001-330S	330	4308R-001-331S	4700	4308R-001-472S	47000	4308R-001-473S
39	4308R-001-390S	390	4308R-001-391S	5600	4308R-001-562S	56000	4308R-001-563S
47	4308R-001-470S	470	4308R-001-471S	6800	4308R-001-682S	68000	4308R-001-683S
56	4308R-001-560S	560	4308R-001-561S	8200	4308R-001-822S	82000	4308R-001-823S
68	4308R-001-680S	680	4308R-001-681S	10000	4308R-001-103S	100000	4308R-001-104S
82	4308R-001-820S	820	4308R-001-821S	12000	4308R-001-123S	120000	4308R-001-124S
100	4308R-001-101S	1000	4308R-001-102S	15000	4308R-001-153S	150000	4308R-001-154S
120	4308R-001-121S	1200	4308R-001-122S	18000	4308R-001-183S	180000	4308R-001-184S
150	4308R-001-151S	1500	4308R-001-152S	22000	4308R-001-223S	220000	4308R-001-224S
180	4308R-001-181S	1800	4308R-001-182S	27000	4308R-001-273S		
220	4308R-001-221S	3300	4308R-001-332S	33000	4308R-001-333S		
270	4308R-001-271S	3900	4308R-001-392S	39000	4308R-001-393S		

STANDARD RESISTOR TOLERANCE IS $\pm 2\%$, SPECIAL TOLERANCE TO $\pm 5\%$ ARE AVAILABLE. SPECIAL RESISTANCES FROM 10 OHMS TO 1 MEG OHM ARE AVAILABLE. SUFFIX DENOTES TOLERANCE S $\pm 2\%$, H $\pm 5\%$, A $\pm 10\%$, B $\pm 20\%$.



ELECTRICAL CHARACTERISTICS

Resistance Range	..... 33 Ω to 220K Ω Standard, 10 Ω to 1 Meg Ω Special
Resistance Tolerance	..... $\pm 2\%$ Standard, to $\pm 5\%$ Special
Power Rating (See Operating Curve)	
Total Package (25°C)	..... 2.0 Watts
Single Resistor (25°C)	..... 0.25 Watts
Short Time Overload	
(2.5 x rated voltage, 5 Sec)	..... $\pm 0.25\%$ Max. Resistance Shift
Resistance Temperature Coefficient	
(—55°C to +125°C) ± 100 PPM/°C Max.
Resistance Temperature Coefficient Tracking	..... 50 PPM/°C Max.
Resistance Voltage Coefficient	..... 50 PPM/Volt Max.
Operating Temperature Range	..... —55°C to +125°C

PHYSICAL CHARACTERISTICS

Body Material	..... Ceramic Sandwich
Lead Material	..... Tin Plated Copper Alloy
Lead Solderability	..... Meets requirements of MIL-STD-202E, Method 208, and MIL-STD-883, Method 2003.
Weight	..... 1.3 Grams

ENVIRONMENTAL CHARACTERISTICS

Thermal Shock	..... $\pm 0.25\%$ Max. ΔR (MIL-STD-883, Method 1011, Cond. B, 15 Cycles)
Resistance to Soldering Heat	..... $\pm 0.25\%$ Max. ΔR (MIL-STD-883, Method 210A, Cond. C, Procedure 2)
Mechanical Shock (500G's, 0.5 ms)	..... $\pm 0.25\%$ Max. ΔR (MIL-STD-883, Method 2002, Cond. A)
Vibration (20G's, .06DA, 20 to 2KHz)	..... $\pm 0.25\%$ Max. ΔR (MIL-STD-883, Method 2007, Cond. A)
Terminal Strength	..... $\pm 0.25\%$ Max. ΔR (MIL-R-83401A)
Moisture Resistance	..... $\pm 0.50\%$ Max. ΔR (MIL-STD-883, Method 1004, 0.1 x rated pwr, delete 3.1A & B, 3.4, 3.6.1)
Load-Life (70°C, 1000 Hrs. @ Rated Pwr)	..... $\pm 1.0\%$ Max. ΔR (MIL-STD-883, Method 1005, Cond. "B")
Solvent Resistance	..... Legible markings and no mechanical damage (MIL-STD-202E, Method 215)

BASIC PRICES

1-99 — \$.65 ea.
100-499 — \$.52 ea.
500-999 — \$.43 ea.

For larger quantity pricing, contact your Bourns representative or distributor ... or contact the factory direct.

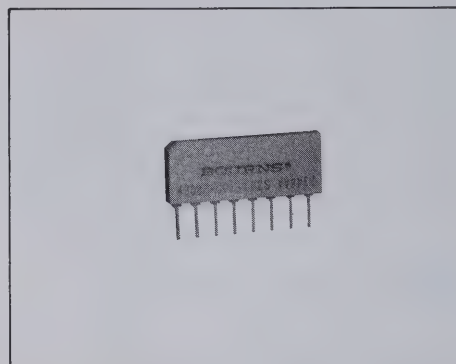


TRIMPOT PRODUCTS DIVISION
1200 COLUMBIA AVENUE
RIVERSIDE, CALIFORNIA 92507
PHONE 714 684-1700

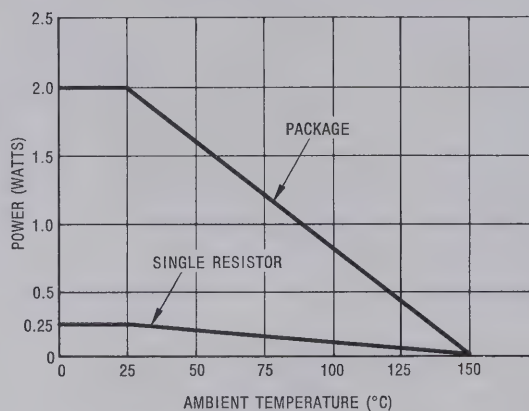
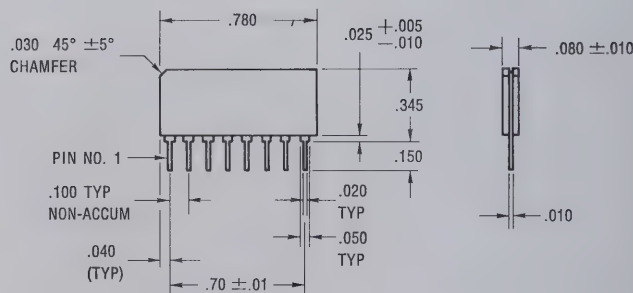
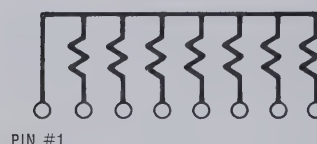
LITHO IN U.S.A.

8 PIN SINGLE-IN-LINE PACKAGE 7 RESISTORS, PIN 1 COMMON

MODEL 4308R-001



SCHEMATIC



POWER-TEMPERATURE DERATING CURVE

INCHES	MILLIMETERS
.005	.127
.010	.254
.015	.381
.020	.508
.025	.635
.030	.762
.050	1.270
.055	1.397
.090	2.286
.100	2.540
.150	3.840
.345	8.763
.700	17.740
.810	20.514

SPECIAL NETWORKS

Networks with from 2 to 18 pins including modified schematics are available for special applications. If a stock network does not meet your requirements contact your Bourns representative.

The Model 4308R-101 Resistor Network is a product of Bourns' many years of experience in thick film technology. The design has been thoroughly tested to meet Bourns' uncompromising standards as to product life and environmental performance. The Model 4308R-101 is a standard 8 Pin SIP packaged network with a configuration of 7 thick film resistors of equal value, pin 1 common.

Typical applications include open collector pull-up, parallel pull-up, wired OR pull-up, TTL input pull-down, MOS memory pull-up and pull-down, unused gate pull-up, power driver pull-up. Replaces CTS 750, Dale SIP 8 and Sprague 216C.



MODEL 4308R-101

8 PIN SINGLE-IN-LINE PACKAGE

7 RESISTORS, PIN 1 COMMON

FEATURES

- Low profile compatible with DIPS
- Reduces total assembly costs
- Standard package is compatible with automatic insertion equipment
- Uniform performance characteristics
- Compatible with IC logic circuit environments

STANDARD RESISTANCES

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
33	4308R-101-330S	330	4308R-101-331S
39	4308R-101-390S	390	4308R-101-391S
47	4308R-101-470S	470	4308R-101-471S
56	4308R-101-560S	560	4308R-101-561S
68	4308R-101-680S	680	4308R-101-681S
82	4308R-101-820S	820	4308R-101-821S
100	4308R-101-101S	1000	4308R-101-102S
120	4308R-101-121S	1200	4308R-101-122S
150	4308R-101-151S	1500	4308R-101-152S
180	4308R-101-181S	1800	4308R-101-182S
220	4308R-101-221S	3300	4308R-101-332S
270	4308R-101-271S	3900	4308R-101-392S

Resistance (ohms)	Part Number	Resistance (ohms)	Part Number
4700	4308R-101-472S	47000	4308R-101-473S
5600	4308R-101-562S	56000	4308R-101-563S
6800	4308R-101-682S	68000	4308R-101-683S
8200	4308R-101-822S	82000	4308R-101-823S
10000	4308R-101-103S	100000	4308R-101-104S
12000	4308R-101-123S	120000	4308R-101-124S
15000	4308R-101-153S	150000	4308R-101-154S
18000	4308R-101-183S	180000	4308R-101-184S
22000	4308R-101-223S	220000	4308R-101-224S
27000	4308R-101-273S		
33000	4308R-101-333S		
39000	4308R-101-393S		

STANDARD RESISTOR TOLERANCE IS $\pm 2\%$, SPECIAL TOLERANCE TO $\pm 5\%$ ARE AVAILABLE. SPECIAL RESISTANCES FROM 10 OHMS TO 1 MEG OHM ARE AVAILABLE. SUFFIX DENOTES TOLERANCE S $\pm 2\%$, H $\pm 5\%$, A $\pm 10\%$, B $\pm 20\%$.



ELECTRICAL CHARACTERISTICS

Resistance Range 33Ω to $220K\Omega$ Standard, 10Ω to 1 Meg Ω Special
 Resistance Tolerance $\pm 2\%$ Standard, to $\pm 5\%$ Special
 Power Rating (See Operating Curve)
 Total Package (25°C) 1.5 Watts
 Single Resistor (25°C) 0.2 Watts
 Short Time Overload
 (2.5 x rated voltage, 5 Sec) $\pm 0.25\%$ Max. Resistance Shift
 Resistance Temperature Coefficient
 (—55°C to +125°C) ± 100 PPM/°C Max.
 Resistance Temperature Coefficient Tracking 50 PPM/°C Max.
 Resistance Voltage Coefficient 50 PPM/Volt Max.
 Operating Temperature Range —55°C to +125°C

PHYSICAL CHARACTERISTICS

Body Material Ceramic Sandwich
 Lead Material Tin Plated Copper Alloy
 Lead Solderability Meets requirements of MIL-STD-202E, Method 208, and MIL-STD-883, Method 2003.
 Weight 0.7 Grams

ENVIRONMENTAL CHARACTERISTICS

Thermal Shock $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 1011, Cond. B, 15 Cycles)
 Resistance to Soldering Heat $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 210A, Cond. C, Procedure 2)
 Mechanical Shock (500G's, 0.5 ms) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2002, Cond. A)
 Vibration (20G's, .06DA, 20 to 2KHz) $\pm 0.25\%$ Max. ΔR
 (MIL-STD-883, Method 2007, Cond. A)
 Terminal Strength $\pm 0.25\%$ Max. ΔR
 (MIL-R-83401A)
 Moisture Resistance $\pm 0.50\%$ Max. ΔR
 (MIL-STD-883, Method 1004, 0.1 x rated pwr, delete 3.1A & B, 3.4, 3.6.1)
 Load-Life (70°C, 1000 Hrs. @ Rated Pwr) $\pm 1.0\%$ Max. ΔR
 (MIL-STD-883, Method 1005, Cond. "B")
 Solvent Resistance Legible markings and no mechanical damage
 (MIL-STD-202E, Method 215)

BASIC PRICES

1-99 — \$.60 ea.
 100-499 — \$.48 ea.
 500-999 — \$.40 ea.

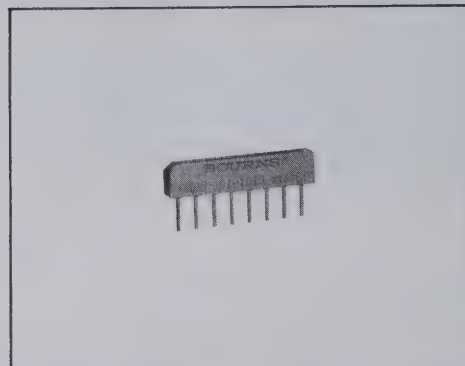
For larger quantity pricing, contact your Bourns representative or distributor . . . or contact the factory direct.



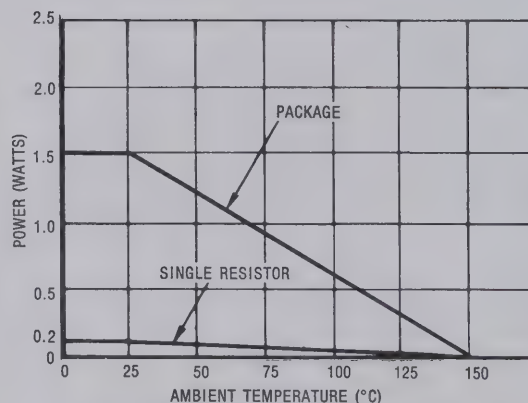
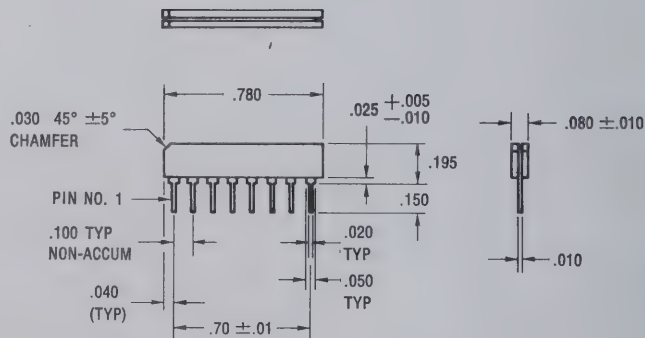
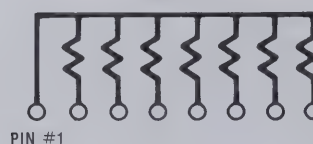
TRIMPOT PRODUCTS DIVISION
 1200 COLUMBIA AVENUE
 RIVERSIDE, CALIFORNIA 92507
 PHONE 714 684-1700

8 PIN SINGLE-IN-LINE PACKAGE 7 RESISTORS, PIN 1 COMMON

MODEL 4308R-101



SCHEMATIC



POWER-TEMPERATURE DERATING CURVE

INCHES	MILLIMETERS
.005	.127
.010	.254
.015	.381
.020	.508
.025	.635
.030	.762
.050	1.270
.055	1.397
.090	2.266
.100	2.540
.150	3.840
.195	4.953
.700	17.730
.810	20.574

SPECIAL NETWORKS

Networks with from 2 to 18 pins including modified schematics are available for special applications. If a stock network does not meet your requirements contact your Bourns representative.



Application Notes

PASSIVE NETWORKS

Fig. 1 – 14 Pin DIP

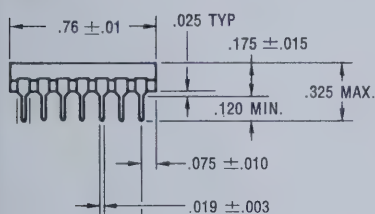


Fig. 2 – 16 Pin DIP

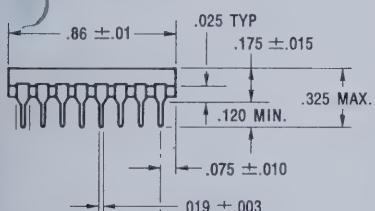


Fig. 3 – Low Profile SIP

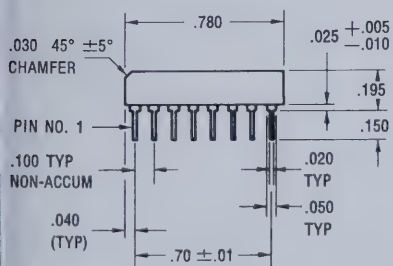
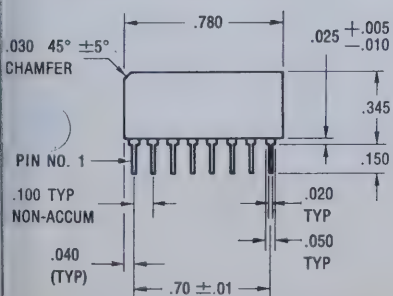


Fig. 4 – Large Area SIP



Passive Networks may be utilized to provide any resistor, resistor/capacitor or capacitor function. Standard devices have been designed by Bourns to meet most common applications. Special devices are made available on special order to unique requirements established by the system designer.

Standard and special devices are packaged in four package styles. The first package is a T0-116 14 pin Dual-In-Line molded package housing Bourns Model Number 4114 (Fig. 1). The second package is a 16 pin version of the T0-116 housing Bourns Model Number 4116 (Fig. 2). The third package is a low profile ceramic Single-In-Line package in 2 to 18 lead configurations housing Bourns Model Numbers 4302-101 through 4318-101 (Fig. 3). The fourth package is a .345 inch height version of the low profile Single-In-Line package housing Bourns Model Numbers 4302-001 through 4318-001 (Fig. 4).

The 14 pin DIP requires a footprint consisting of two rows of holes spaced .300 inches apart, with each row containing 7 holes (.025 inch diameter) spaced .100 inches apart (Fig. 5). The 16 pin DIP requires a footprint identical to the 14 pin DIP except each row requires one additional hole. Both DIP's require .170 inch spacing between end holes of two packages to allow overhang clearance. Side clearance is limited only by P.C. Board pad locations. Minimum headroom is .190 inches for both DIP's. The 2 through 18 pin SIP requires a footprint consisting of one row of .025 inch diameter holes spaced .100 inches apart, the number of holes matching the device pin count (Fig. 6). Both SIP's require only .100 inch spacing between rows of holes of two packages to allow overhang clearance. Only .100 inch spacing between rows of holes is required for side clearance. Hence, four 8 pin SIP's can be located in the space required for one 16 pin DIP providing almost twice the resistor count per unit board area. The low profile version requires minimum headroom of .200 inches while the standard version requires .350 inches.

Fig. 5 – 14 Pin DIP Footprint

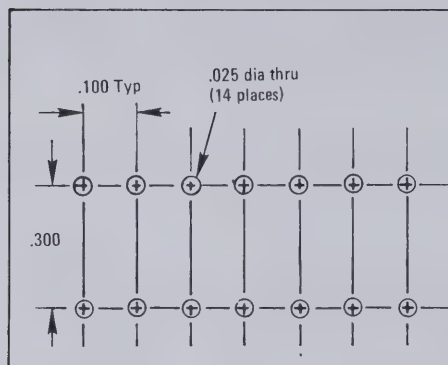


Fig. 6 – SIP Footprint

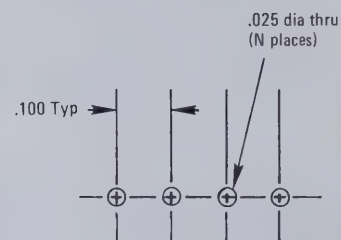
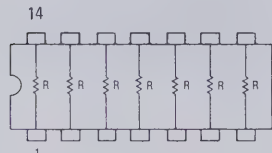


Fig. 7 – Model 4114R-001 Schematic



Standard Devices

Model 4114R-001 provides 7 isolated resistors of equal value including RETMA values from 33 ohms to 220K ohms in the 14 pin DIP (Fig. 7). Specials are available from 10 ohms to 1 Megohm. This device is primarily utilized for power gate pull-up, current limiting, long line impedance balancing, line termination, ECL output pull-down and other applications requiring isolated resistors (Fig. 8).

Fig. 8 – Model 4114R-001 Typical Applications

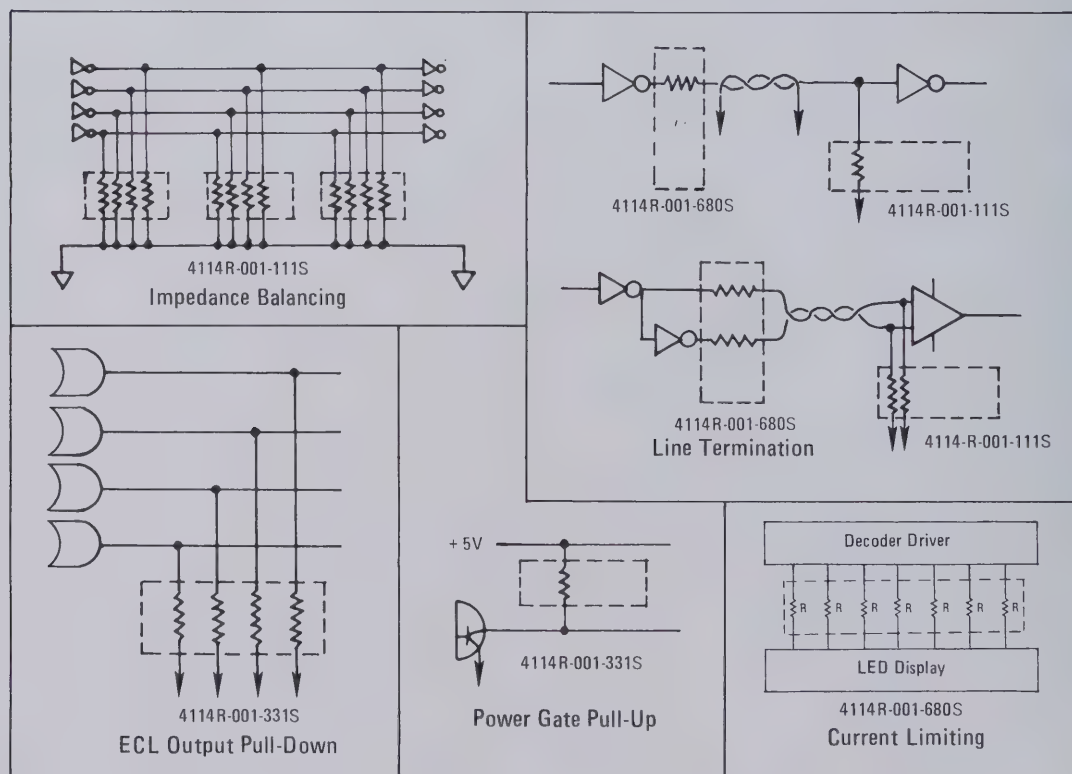
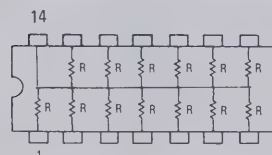


Fig. 9 – Model 4114R-002 Schematic



Model 4114R-002 provides 13 resistors of equal value including RETMA values from 33 ohms to 220K ohms with one side of each resistor common to pin 14 in the 14 pin DIP (Fig. 9). Specials are available from 10 ohms to 1 Megohm. This device is primarily utilized for TTL input pull-down, unused gate pull-up, open collector pull-up, high speed parallel pull-up, power driver pull-up, wired OR pull-up and other applications where resistors are tied to a common point (Fig. 10).

Fig. 10 – Model 4114R-002 Typical Applications

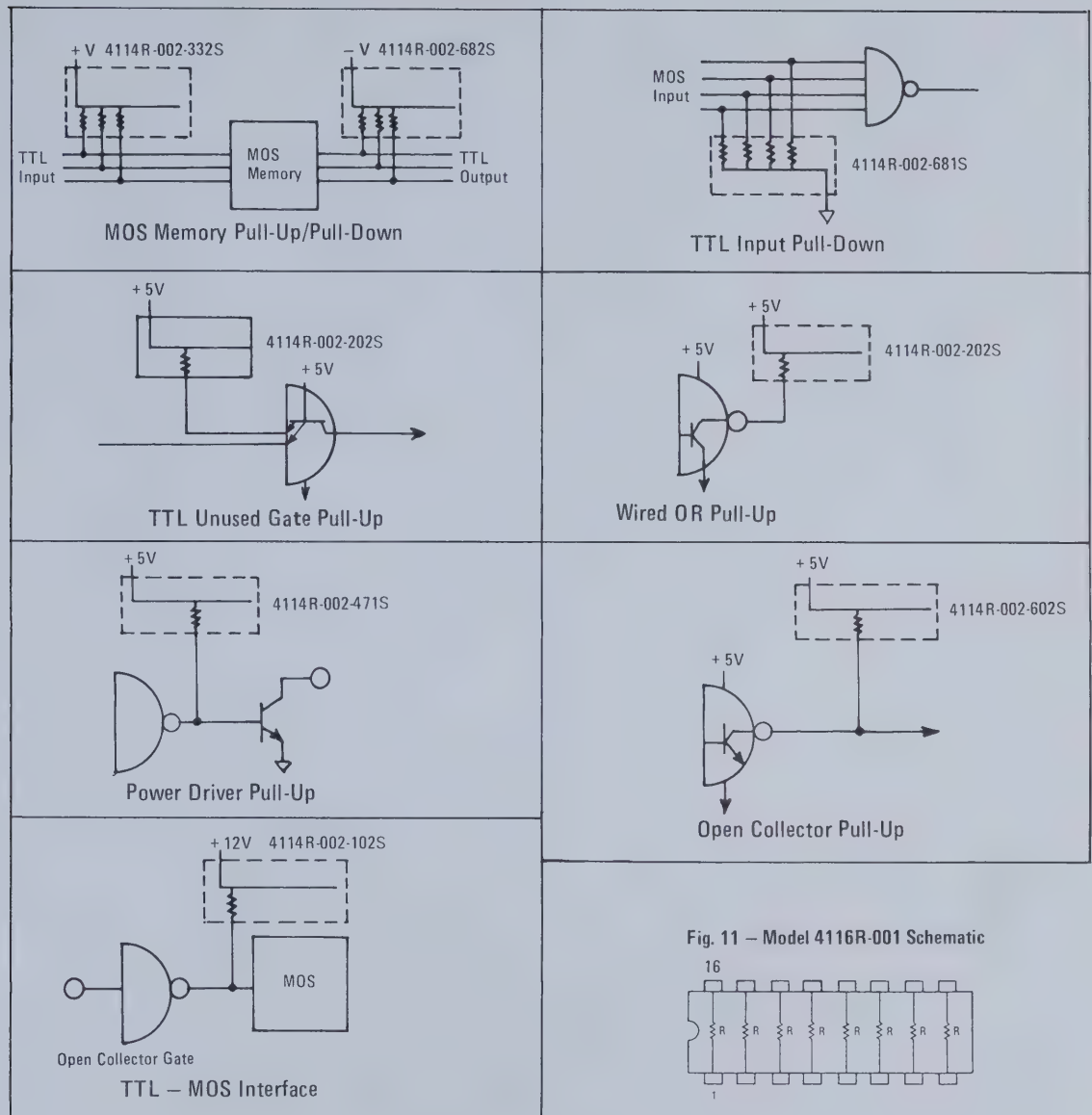
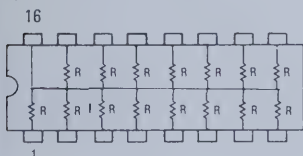


Fig. 12 – Model 4116R-002 Schematic



Model 4116R-001 is identical to Model 4114R-001 except that the pins are expanded from 14 to 16 and resistors from 7 to 8 (Fig. 11). Uses for this device are the same as for Model 4114R-001 but space and cost savings are slightly increased.

Model 4116R-002 is identical to Model 4114R-002 except that the pins are expanded from 14 to 16 and resistors from 13 to 15 (Fig. 12). Uses for this device are the same as for Model 4114R-002 but space and cost savings are slightly increased.

Model 4308R-101 provides 7 resistors of equal value including RETMA values from 33 ohms to 220K ohms with one side of each resistor common to pin 1. The package is the low profile SIP. Specials are available for resistor values from 10 ohms to 1 Megohm and for pin counts from 2 to 18. This device is primarily utilized in applications similar to Models 4114R-002 and 4116R-002 but provides almost twice the number of resistors per board space as the Model 4116R-002.

Model 4308-001 is identical to Model 4308-101 except that the head space required is .350 inches versus .200 inches. Uses are identical to Model 4308R-101.

Special Devices

Special devices are available in standard packages when standard schematics will not provide the function required. Due to the versatility of Bourns cermet process most circuit requirements can be met. A few basic guidelines must be utilized to provide a cost-effective design. These basic guidelines are as follows:

1. Keep package power dissipation within those limits specified on the applicable standard product catalog sheet. If the maximum power is exceeded alternatives such as forced-air cooling, heat sinks or custom packages must be considered.
2. Pin requirements must be kept equal to or less than those available or a custom package will be required.
3. Attempt to require a minimum of conductor cross-overs by optimum pin assignments. Obviously PCB layout simplicity cannot be totally sacrificed but both board and network complexity must both be considered.
4. The use of capacitors in standard packages is presently limited to Dual-inline-pin configuration. The value or number of capacitors that can be accommodated is a trade-off between these two variables, along with type of dielectric and voltage rating.
5. Attempt to keep the range of resistor values as low as possible within a given package and resistor tolerances as loose as possible. Ratio match can be initially set within $\pm .1\%$ and absolute tolerances held to $\pm .5\%$ if necessary.
6. Attempt to partition the circuit into as few types of passive networks as possible even if some portions of the network will be unused at some locations, just as you would for digital integrated circuit design.
7. A functional electrical specification written around the entire network will be more cost-effective than specifying each network component.

A few comments with respect to performance specifications are as follows:

1. Resistance temperature coefficient is applicable to resistors of all values.
2. Resistance temperature coefficient tracking is applicable to resistors of the same value only.



BOURNS® Resistor Networks

14- AND 16-PIN DIP AND 8-PIN SIP STYLES
SIX POPULAR STANDARD SCHEMATICS — PLUS SPECIALS



TRIMPOT PRODUCTS DIVISION
1200 COLUMBIA AVENUE
RIVERSIDE, CALIFORNIA 92507
PHONE 714 684-1700



1946 BOURNS, INC. TWENTY YEARS OF GROWTH 1966

HIGHLIGHTS OF 1966

	1966	1965
Net Sales a 32% increase over 1965	\$53,962,949	\$40,889,087
Earnings before Federal Taxes and minority interests, an increase of \$1,334,037 over 1965	\$6,849,414	\$5,515,377
Net Earnings highest in history	\$3,551,124	\$2,885,209
Net Earnings per Share based on 3,179,810 shares outstanding	\$1.12	\$.91
Working Capital a current ratio of 2.1	\$11,084,731	\$7,805,982
Property, Plant and Equipment an increase of \$3,484,996	\$15,915,018	\$12,430,022
Orders received during 1966 a 60% increase over 1965	\$67,730,000	\$42,265,000
Stockholders' Equity an increase of \$3,324,165 over 1965	\$16,175,445	\$12,851,280
Worldwide employment	4,118	3,214

Page 2 On August 11, 1966, the capital stock of the company was listed on the New York and Pacific Coast Stock Exchanges, using the symbol "BOU". **Page 3** Left to right: William J. Stoutenburgh, Jr. of Brinton & Company, specialist assigned the trading of Bourns stock, Marlan E. Bourns, and Edward C. Gray, Executive Vice President of the NYSE, are shown at the opening of trading on August 11.



PRESIDENT'S MESSAGE

It is particularly gratifying to report that the 20th anniversary year of the founding of the company was the most successful in our history. Worldwide sales volume reached a new high of \$53,962,949, an increase of 32% over the record level achieved in 1965. Consolidated earnings also reached an all-time high of \$3,551,124, which was equivalent to \$1.12 per share. The significant increases in sales and earnings can be largely attributed to the excellent acceptance of our broadened product lines, our aggressive domestic and foreign marketing programs, and the demonstrated efficiency of our manufacturing operations. Constant adherence to our fundamental philosophy of "quality products first and foremost" has solidified our position as a leader in the electronics industry and is another important factor in the excellent growth our company has consistently enjoyed.

During 1966, new product releases numbered the highest in our history. The Trimpot and Instrument Divisions offered for sale new miniaturized components and instruments, representing a wide range of technologies, to meet the increasingly stringent requirements of commercial, industrial, and military users. Products designed and released in 1966 by Chicago Aerial Industries, Inc., our 80% owned subsidiary, enabled that company to maintain its excellent position as a leading manufacturer of aerial photographic cameras, systems, and related devices. Bourns, Inc. will continue to emphasize the design and development of unique and reliable products which are essential to the dynamic electronic and aerospace markets. We will also continue to pursue potential acquisition situations which are compatible with our long-range diversification program and offer favorable profit opportunities.

On August 11, 1966, the capital stock of the company was listed on the New York and Pacific Coast Stock Exchanges. This noteworthy event represented a major milestone in our financial history and has resulted in markedly expanding the investor interest in our company, as well as promoting greater international recognition of our company.

Bourns, Inc. has, for many years, recognized the excellent sales potential of the foreign electronics market. Since 1962, the company has established a broad product distribution network headed by three wholly owned European sales subsidiaries. Our foreign expansion program was highlighted in 1966 by the selection of a prime manufacturing site near Edinburgh, Scotland, on which a new facility will be constructed in 1967. Employees at this location will manufacture selected company products for distribution throughout Western Europe. Our newest wholly owned subsidiary, Bourns Puerto Rico, Inc., operating in leased quarters in San Juan during the past year, achieved an excellent production level. The initial phase of a new ultramodern plant to house the activities of this new company was completed in early 1967. Increased production was also achieved by our Canadian subsidiary, which continues to make substantial penetration into that country's expanding market place. The increased utilization of these plants during 1967 and future years will sharply augment the overall manufacturing capabilities of the company and provide significant competitive advantages throughout the world.

On behalf of management, I wish to sincerely thank and compliment all of our employees for their significant contributions and dedicated performance which have been so important in the growth and success of our company over the 20 years of operation. I am confident our entire organization will remain highly responsive to the challenges of the future and will maintain our position as a recognized leader in the electronics industry for many years to come.

1966



Marlan E. Bourns

MARLAN E. BOURNS, *President*

1966

OPERATIONS

SALES AND EARNINGS

Consolidated sales from domestic and international operations of \$53,962,949 were the highest in the history of the company, and represented a 32% increase over 1965 sales of \$40,889,087. Each division and subsidiary experienced an increase in sales volume over the prior year. Consolidated net earnings of \$3,551,124 were equivalent to \$1.12 per share, compared with 91¢ for the previous year, based on 3,179,810 shares outstanding.

The exceptional performance achieved by the company in significantly increasing its sales volume is the result of greater penetration of industrial and commercial markets for computers, data processing systems, communication systems and industrial controls. It is estimated that approximately 35% of sales of electronic components and instruments, the same percentage as in 1965, were made to United States government agencies and contractors primarily for use on military, defense and aerospace contracts. Over 90% of the sales of the major subsidiary, Chicago Aerial Industries, Inc. also found end use in government applications.

As in previous years, the extensive corporate Cost Reduction Program contributed to the increased earnings for 1966. Over \$700,000 in audited annual savings were effected through reduction of scrap and rework costs, value purchasing, value engineering, and other profit improvement activities.

DIVIDENDS

The company has consistently followed the policy of retaining all net earnings to finance its rapid growth and to provide funds for current working capital requirements. In view of the ambitious worldwide expansion program, it is planned to continue this policy to maximize the growth of the company and thereby accrue long range benefits to its stockholders.



Page 4 Experienced production personnel utilize a variety of equipment to modify precision potentiometer parts for the special requirements of Bourns customers.



\$53,963

\$40,889

\$22,365

\$21,401

\$19,450

\$14,559

\$11,563

\$9,170

\$5,820

\$4,378

NET SALES

Dollars in Thousands

1966

1965

1964

1963

1962

1961

1960

1959

1958

1957



1966

FINANCIAL DEVELOPMENTS

Bourns, Inc. maintained a strong financial position during 1966, as consolidated net working capital increased by \$3,278,749, to an all-time high of \$11,084,731. As a result of total expenditures of \$3,510,171 for land, new facilities, and a variety of advanced equipment, the current ratio declined slightly from 2.2 to 2.1. Inventories increased significantly during 1966, to assure rapid service to an ever-increasing number of new customers and to meet the delivery requirements of the largest consolidated backlog in the history of the company.

As a result of a 400,000 share secondary offering early in the year, the company met the requirements for listing on the New York and Pacific Coast Stock Exchanges. The listing on these major exchanges occurred on August 11, 1966, and has improved the market for the capital stock of the company.

To provide funds for the ambitious expansion program of the company, outstanding unsecured debt was consolidated by a \$7,000,000 term loan from Security First National Bank in November of 1966. This loan is supplemented by a \$3,000,000 short term line of credit for current working capital requirements. It is anticipated this financing will enhance the overall growth of the company and minimize the need for equity financing in the foreseeable future.

The ownership of over 200 United States and foreign patents by the parent company and subsidiaries, as well as numerous pending U. S. and foreign patent applications, reflect the strong proprietary product position of Bourns, Inc. During the past year, the company received approximately \$163,000 in fees and royalties from various U. S. and foreign licensees.

Page 7 (1) The company's IBM 1440 Computing System provides management with key financial, production and marketing information. **(2)** Skilled workers assemble ultra-miniature products under binocular microscopes.

2

1



1966

FACILITIES

It is the long-range plan of the company to establish strategically located manufacturing facilities throughout the free world to gain maximum economic advantages and improve its competitive position. In line with these objectives, a highly functional 75,000 sq. ft. production facility in Ames, Iowa was completed in December of 1965, and occupied during the early part of 1966. The new structure, supplementing an existing Ames production facility, is designed to create the ultimate in working conditions and productive efficiency. The plant incorporates a natural gas total energy system, as well as many of the outstanding features of the Riverside Trimpot Division facility, which was selected as one of the Top Ten Plants in the United States for 1963.

Construction of the first module of the new Bourns Puerto Rico, Inc. plant near San Juan commenced in 1966, and the 12,000 sq. ft. ultramodern facility was completed in February 1967. This initial module is part of an overall master plan which provides for long-range expansion to over 50,000 sq. ft. on a 4.8 acre site. The Puerto Rican activities offer significant operating benefits, including an excellent labor market and important tax advantages.

The first European manufacturing facility, located near Edinburgh, Scotland, is scheduled for completion during the fall of 1967. This 15,000 sq. ft. structure is designed for eventual expansion to over 75,000 sq. ft. The eight-acre building site was selected from among 26 surveyed in the United Kingdom because of its access to an excellent labor market, the liberal development grants of the British government, and essential transportation and communications links with major European industrial centers. The scheduled production of this plant will minimize import duties into the United Kingdom and the European Free Trade Association, provide rapid deliveries through closer production support, and strengthen our continuing penetration of the important European market.

Pending completion of the new plant, an existing building on the site has been renovated and will be used for training new employees and initiating production operations. Key Scottish personnel, including a plant manager, have been hired and are receiving extensive training at Bourns, Inc. in the United States to insure basic company philosophy, policies, and production technology will be fully implemented in the new operation.



EMPLOYER AND EMPLOYEE RELATIONS

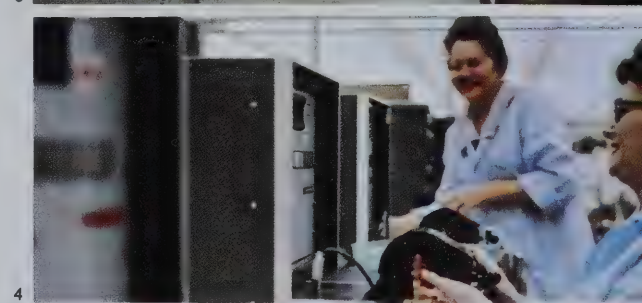
Bourns, Inc. enjoys an excellent reputation as an enterprising and rewarding place at which to work, and has experienced another year of harmonious relations with its employees. Progressive personnel administration has been a fundamental objective of Bourns, Inc. since its founding and has always been regarded as a key factor in the continued success of the company.

The outstanding employee benefit program of the company is continually being evaluated and improved to meet changing needs and circumstances. During the past year, a Credit Union was established for the Riverside employees, new dining accommodations were constructed, and an employee stock purchase plan was adopted. Improvements were also made in the vacation policy, group insurance program, holiday and overtime policies, and many other benefits and operating practices were revised to improve working conditions and foster high employee morale.

Worldwide employment of Bourns, Inc. and its subsidiaries at the close of 1966, totaled 4,118 employees, representing an increase of 28% over the comparable figure for 1965. Nationwide recruitment was intensified to fill the many technical and professional openings which resulted from overall corporate expansion and several new training programs were instituted to improve employee skills and help compensate for the tightening labor market.

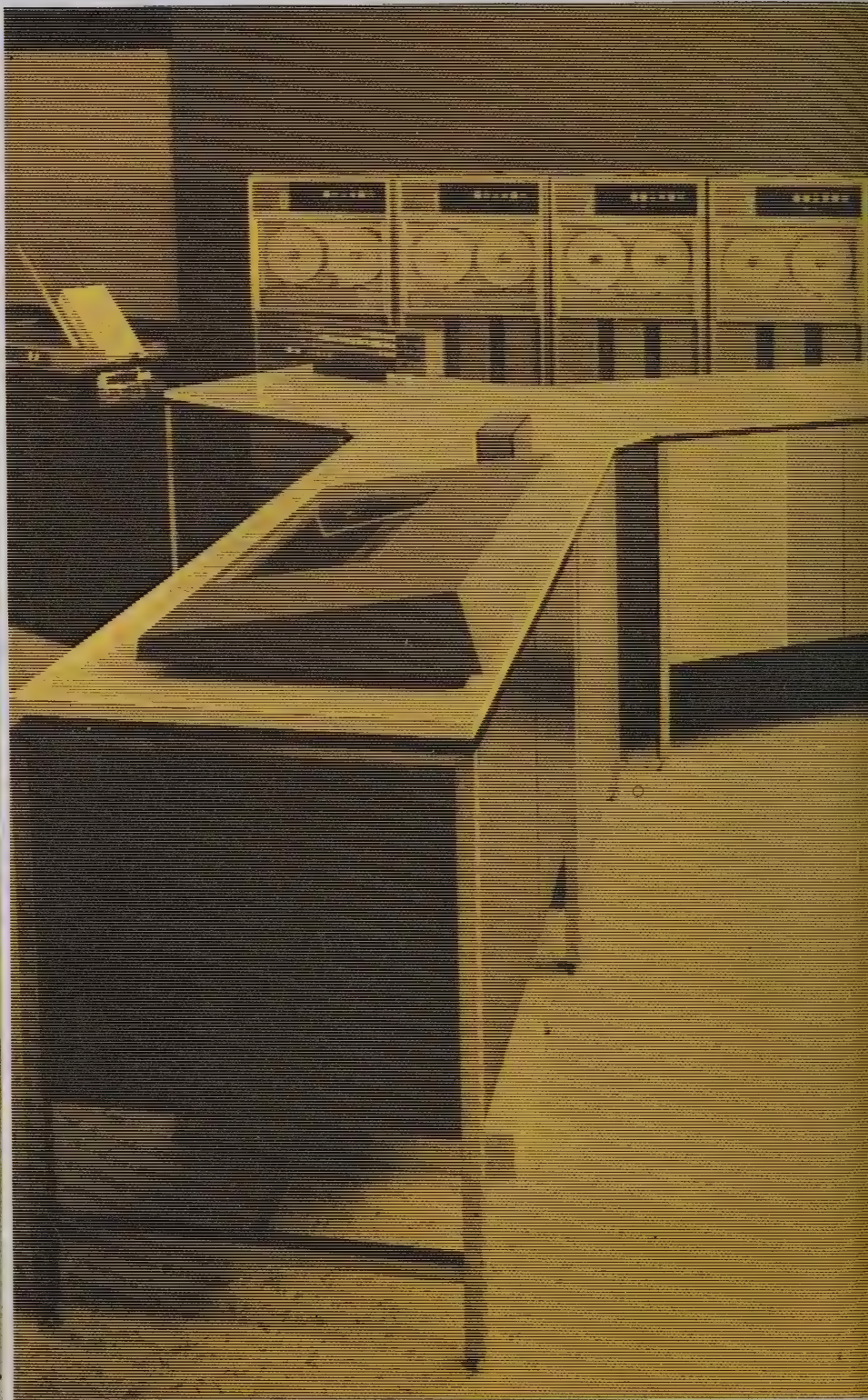
The employee benefit program is highlighted by progressive cash and deferred profit sharing plans which were established by the company in the mid 1950's. This profit sharing program, one of the finest in the nation, is a key factor in attracting and retaining high caliber employees and promoting teamwork, efficiency, and mutual understanding throughout the company.

Page 8 The Corporate Offices and Trimpot Division Headquarters are located in a modern 10,000 sq. ft. facility in Riverside, California. **Page 9** (1) The general assembly area at the Ames, Iowa plant utilizes a work module concept which provides all utilities for each assembly station. (2) Architects rendering of Bourns (Trimpot) Ltd. new manufacturing facility, Edinburgh, Scotland. (3) The new Riverside Trimpot Division cafeteria offers hot and cold food in well-lighted, pleasantly decorated surroundings. (4) Final inspection employees use special semi-automatic testing equipment designed and built by Bourns personnel. (5) The new Puerto Rican subsidiary occupied the first unit of its expandable facility near San Juan early in 1967. (6) The Ames, Iowa facility became fully operational in 1966, and has been nominated for the "Top Ten Plants of the Year" award by FACTORY magazine.





1



2

MANUFACTURING AND QUALITY CONTROL

The manufacturing capabilities of the division were substantially increased in 1966 by the occupancy of the new, highly functional Ames, Iowa plant. The dual production capabilities of the California and Iowa facilities permit specialization of manufacturing operations on major product lines to assure maximum operational efficiency. Carefully trained production and quality control personnel, employing proven techniques and equipment assure the uninterrupted flow of products to customers throughout the world.

In view of the minute size, extremely close tolerances and rigid specifications required in the manufacture of sophisticated electronic components, automatic and semiautomatic equipment is used extensively throughout the division. Automated plastic molding presses, precision Swiss screw machines and high speed punch presses provide millions of small parts to Bourns worldwide manufacturing facilities. Continuous element winding machines automatically produce precisely wound, cemented and helixed component elements at the Ames and Riverside facilities.

Careful surveillance of quality at every phase of the manufacturing operation has enabled Bourns to consistently maintain one of the lowest customer return rates in the industry — one unit returned for each 1000 units shipped. The use of semiautomated equipment for nearly all inspection activity has increased the efficiency of the testing procedures by an average of 50%. The Reliability Assurance Testing Program of the division is considered the finest in the industry because of unrelenting enforcement of high quality standards, and is the customer's final guarantee of product reliability from Bourns, Inc.

Page 12 (1) Applications of the Division's adjustment potentiometers include use in the random vibration test equipment built by Ling Electronics Division of LTV, Inc. **(2)** The Series 200 Data Processing System produced by Honeywell, Inc. uses Trimpot Division products. **Page 13 (1)** Specially built, continuous winding machines produce high quality precision potentiometer resistance elements. **(2)** A mechanized assembly line is one of the innovations introduced to improve production-line efficiency. **(3)** Precision potentiometers undergo 100% electrical and mechanical inspection prior to shipment.



1



2



3



1966

INSTRUMENT DIVISION

PRODUCTS AND APPLICATIONS

New orders during 1966 were the highest in the history of the division as the demand for high performance measurement instruments pioneered by Bourns, Inc. accelerated in all major markets. Several large orders sharply increased the backlog and will assure sustained production runs in the future. In addition to meeting requirements of aerospace, commercial and military markets, new programs were initiated to expand Bourns product capabilities into more advanced applications and new technologies.

Most major U. S. missile and aerospace programs utilize instruments designed and manufactured by the division to monitor, sense or control minute changes in position, pressure and acceleration in a multitude of sophisticated applications — Gemini, Lunar Excursion Module, Apollo, Saturn Booster, Lunar Orbiter, Surveyor, to name only a few. These highly advanced instruments, commonly called “transducers”, are important components in electronic recording and measuring equipment and are designed to provide precision information over a wide range of temperature, vibration and other severe environmental conditions. They are used in such diverse applications as measuring pressure in a rocket engine chamber, correcting for the slightest variation in the trajectory of a missile during flight, determining minute changes in acceleration for aircraft automatic landing control systems, and generating electrical signals which can be used to transmit data through a telemetry system for storage and subsequent computation and analysis.

The extensive experience of the division in the manufacture of high quality transducers has been a distinct competitive advantage in assuring customers of the broadest selection of highly reliable transducers available in the industry. Bourns products are offered in a wide variety of physical configurations and electrical characteristics incorporating potentiometric, variable reluctance, and linear differential transformer concepts. These versatile devices, capable of measuring an ever expanding variety of physical functions, must be carefully selected and adapted for each specific application. Insuring the accurate and reliable performance of the transducer for the intended application is one of the primary objectives of the Instrument Division.

RESEARCH, DEVELOPMENT AND ENGINEERING

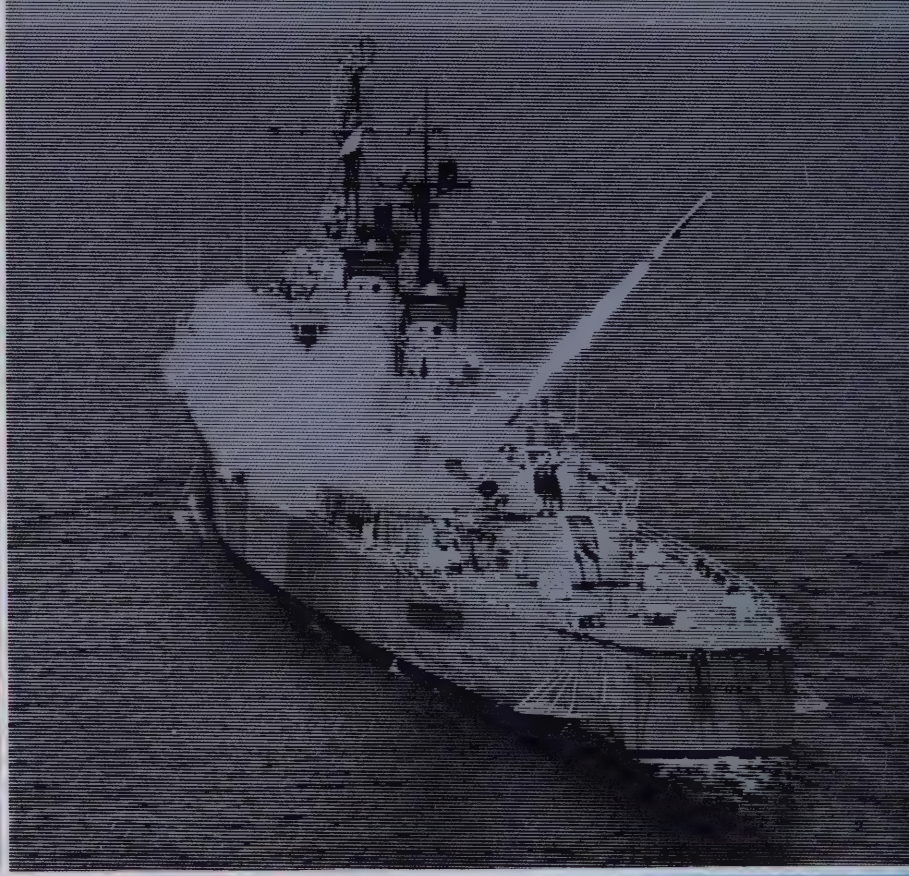
A significant number of product innovations were introduced by the division during the past year. Infinite resolution potentiometric elements were added to the position and pressure transducer lines to provide improved resolution and longer product life. The highly advanced capabilities in AC circuitry employed in pressure, acceleration and displacement transducers, were also expanded significantly and performance characteristics previously considered unattainable were achieved through close coordination of electronic and sensor technologies.

Through extensive research and careful control of product development, the division made marked improvements in the performance characteristics of its various types of pressure sensors, such as bourdon tubes, diaphragms and capsule assemblies. Products incorporating these pressure sensing devices are now produced in a wide selection of materials and configurations and offer improved reliability and greater design versatility at lower cost.

The division is continually alert to new processes and technologies which may have application within its specialized fields of instrumentation. New production techniques currently undergoing evaluation include electron beam welding, laser processes, and the use of advanced equipment for fabricating miniaturized assemblies.

Page 14 Instrument Division products include a wide selection of precision transducers for the measurement of position, pressure and acceleration. **Page 15 (1)** The Bourns Auto-Stat, an automatic calibration testing console provides high speed, accurate data on up to 20 instruments simultaneously. **(2)** The Instrument Division has supplied transducers for virtually every major United States aerospace and missile program since 1946.





MANUFACTURING AND QUALITY CONTROL

The productive capabilities of the division have been expanded significantly with the addition of tape controlled lathes and mills which allow high volume production of component parts with maximum accuracy and repeatability. Many other specialized pieces of equipment, such as thread rollers, unique to our manufacturing processes, were also installed. Automatic consoles for the assembly and testing of products of the division were introduced which substantially reduce manufacturing costs by minimizing manual assembly operations, as well as significantly improving product performance and reliability.

In many cases, equipment is designed and, if necessary, produced by Bourns in order to satisfy specialized production or inspection requirements. A fully automated pressure calibration system developed by the division allows an operator to preprogram an entire test schedule of twenty or more pressure calibration points. With robot-like accuracy, the machine will calibrate ten instruments simultaneously, recording the calibration data through the use of an IBM typewriter in programed digital form. This equipment not only saves the operator time, but provides a level of accuracy that is not readily attainable with conventional, manually operated test equipment. The introduction of this new equipment is indicative of the paramount objective of maintaining the highest quality and reliability standards on all product lines of the division.

The Instrument Division was the recipient of the "Vendor of the Year" award for 1966, from the Reentry Systems Department of General Electric Company. The division was selected as the award winner from approximately 4000 vendors and suppliers for rendering outstanding service at a critical time and maintaining on-schedule deliveries of vital pressure transducers which are contributing substantially to the success of the Mark XII program, the Minuteman Reentry Vehicle. Management is very proud of all employees whose efforts contributed to the success of this vital aerospace program.

Page 16 (1) The Division produces a wide selection of measurement instruments to meet the exacting requirements of the aerospace and industrial markets. (2) Precision transducers and switches designed and produced by the Instrument Division are used in the MK-46 Torpedo program. (3) One of the most exciting applications of the Division's products is the use of a Model 737 transducer to measure helium tank pressure on NASA's Surveyor Lunar Spacecraft. **Page 17** (1) New, high-speed, automatic bar-fed lathes are used for producing precision transducer parts for the exacting aerospace market. (2) The "Vendor of the Year" award was presented to the Instrument Division by the General Electric Missile and Space Division for their important contributions to the Minute Man Missile program. (3) Production line techniques feature the latest automatic calibration and testing equipment for volume production of instruments.



1966

CHICAGO AERIAL INDUSTRIES, INC.

In March, 1965, Bourns, Inc. acquired controlling interest in Chicago Aerial Industries, Inc., a tri-divisional company with corporate headquarters in Barrington, Illinois. Bourns, Inc. currently owns approximately 80% of the outstanding stock of this firm whose sales and earnings have increased 26% and 36% respectively, during the two years of association with the parent company.

Consolidated 1966 sales of CAI® totaled \$16,740,483. This figure was the highest in the company's 44-year history, as were net earnings of \$940,716. Management is confident that a steady flow of unique new products and techniques, coupled with the excellent reputation of all CAI divisions, will assure a continuation of the profitable growth for this major subsidiary of Bourns, Inc.

INDUSTRIES DIVISION

Aerial reconnaissance systems developed by the Industries Division have played major roles in the defense effort of our country. During World War II, continuous strip cameras were used to determine water depths prior to amphibious landings. In Korea, these same cameras provided vital beach reconnaissance information preceding the Inchon landings of U.S. ground troops. In 1962, CAI cameras photographed the Russia missile installations in Cuba and documented their removal. Today, the major emphasis is concentrated in Vietnam where it is estimated that up to 50,000 reconnaissance photos are being taken daily. Nearly all U. S. reconnaissance aircraft utilize aerial camera systems or related equipment manufactured by Chicago Aerial Industries. While the division is perhaps best known for its accomplishments in the field of aerial cameras and camera systems, its product lines also include navigational view finders, electronic flash night illumination systems, computing optical gunsights, helicopter blade trackers, and fiber optics material which can simultaneously transmit, bend, and magnify light waves and images.



In 1966 the division was awarded an \$8.8 million contract by the U. S. Air Force for recently developed aerial reconnaissance systems. These sophisticated camera systems are scheduled for extensive use on the RF-4C Phantom II in Vietnam and other locations throughout the world. Based on extensive experience with image intensification techniques, CAI was also awarded a Navy contract to develop the first image-intensified reconnaissance camera. This novel device employs special night flash features and will enable aircraft to gather photo intelligence at altitudes beyond the range of ground fire, as well as conduct low altitude photo missions without supplementary illumination. The new KS-87 airborne surveillance system being developed by CAI for the Army is a complete photo reconnaissance, processing, and data conversion system. The company also has systems management responsibility for the image transducer which electronically reads the processed film and converts vital information for transmission to ground control centers.

Over 90,000 sq. ft. of the division's 182,000 sq. ft. award-winning facility in Barrington, Illinois, is devoted to manufacturing and quality control activities. Employing the latest production techniques and equipment, including numerically-controlled machines, optical devices, and computers, every manufacturing phase is carefully planned and controlled to maximize production efficiency. New product designs are translated into unique methods and processes which produce reconnaissance systems and related equipment capable of reliable performance under a wide variety of environmental and functional operating conditions.

Page 18 The Industries Division and Corporate Offices are located in an award winning 182,000 sq. ft. facility in Barrington, Illinois. **Page 19** (1) U. S. Army OV-1 Mohawk employs several Chicago Aerial Industries products in its Airborne Photo Surveillance System. (2) Chicago Aerial Industries' Model VF-57 Viewfinder is used on the new Navy RF-4B and the Air Force RF-4C Phantom II supersonic reconnaissance aircraft. (3) KA-50A and KA-51A Cameras at Chicago Aerial Industries plant await final inspection and shipment. These units are widely used to provide high resolution photography under a broad range of environmental conditions.



3



1966

AERIAL SURVEY DIVISION

Franklin Park, Illinois, is the headquarters of the Aerial Survey Division, which provides aerial photography and photogrammetric services to industry, utility companies, governmental agencies, and land developers throughout the nation. Photogrammetry services can be used advantageously to map proposed routes for roads, ascertain the number of cubic yards of earth to be moved in construction programs, plan flood control projects, and determine the volume of materials in large storage piles for industrial inventory control purposes. It is estimated the current annual market in the United States for the various types of services provided by aerial survey companies is in excess of \$100,000,000 and this market is anticipated to experience a rapid growth in the future.

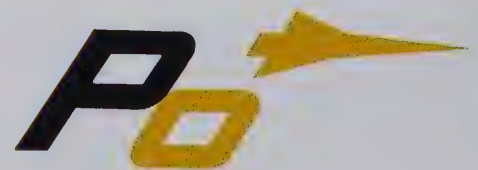
To cope with the increasingly complex photogrammetry assignments, the Aerial Survey Division acquired a Riley Rocket aircraft to supplement two existing planes. This new aircraft has reduced job performance time and allows the division to undertake work of far greater operational scope. A new computer was also purchased to accelerate engineering calculations and thereby reduce the costs of topographic maps. The division is constantly developing new techniques and applications to expand the scope of photogrammetry and anticipates making continued significant inroads into this major expanding market.

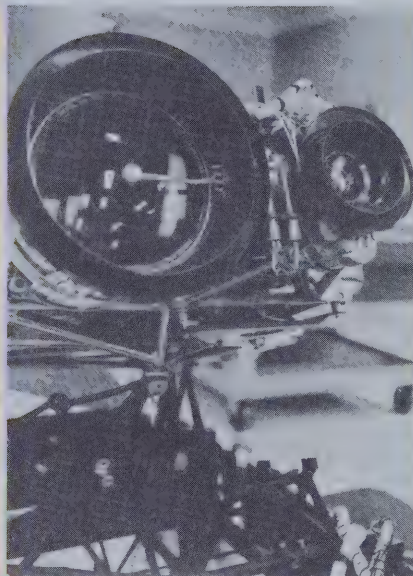
PACIFIC OPTICAL DIVISION

The Pacific Optical Division, located in Inglewood, California, is a well-recognized manufacturer of high resolution lenses, prisms, and other optical components. During 1966 this division made significant strides in broadening its product base in the growing field of electro optics.

Pacific Optical has designed a major component in the optical guidance system for use on the Condor missile which permits the weapon to be guided to impact by television. The division is also providing high performance lenses for use in very sophisticated low light level television reconnaissance and weapon delivery systems. These systems are so sensitive that the landscape can clearly be seen by starlight. In addition, an advanced optical beam splitter system has been developed for use in commercial microfilming equipment.

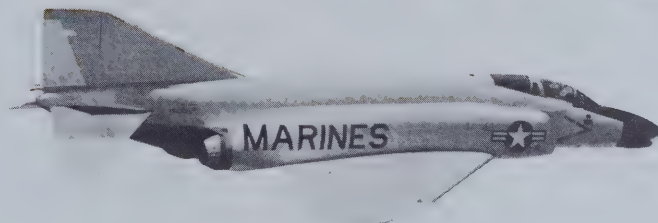
During 1966 the Pacific Optical Division leased new facilities which will more than double its previous space, and made substantial expenditures for highly advanced production and test equipment to maintain the division as one of the best equipped in its field.



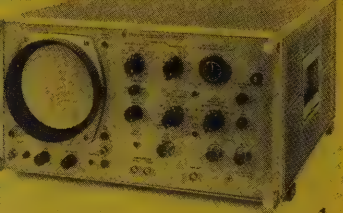


2

3



Page 20 (1) Aerial view taken by Chicago Aerial Survey at Fort Randall, South Dakota for engineers developing a flood control dam on the Missouri River. **Page 21 (1)** The world's largest precision copy camera, custom built for Chicago Aerial Survey, is capable of copying photos the size of a livingroom rug. **(2)** A portion of the photo system aboard Lunar Orbiter III that takes high resolution photos from 25 to 30 miles above the lunar surface. The lens at left was designed and manufactured by Pacific Optical. **(3)** The first close-up photo of Copernicus Crater, one of the most prominent features on the face of the moon, was taken by Lunar Orbiter II telephoto lens. This lens was designed and manufactured by Pacific Optical.



1966

BOURNS WORLDWIDE MARKETING PROGRAM

DOMESTIC MARKETING PROGRAM

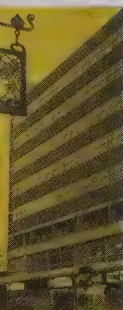
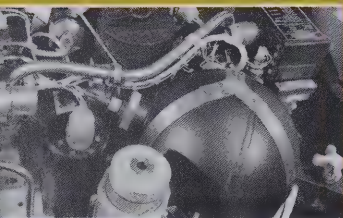
In order to obtain the most effective worldwide exposure for its products, Bourns has developed a comprehensive domestic marketing program which encompasses industrial, commercial, aerospace and military fields. To effectively serve these diverse and widespread markets, the Trimpot and Instrument Divisions currently have eleven direct sales offices staffed by Bourns personnel in major industrial centers throughout the United States. The utilization of strategically located branch sales offices wherever justified by market potential, has provided significantly deeper market penetration for Bourns products. It is currently estimated that 75% of all domestic orders are received from territories served directly by company employees. These sales offices are staffed with well-qualified engineers who explore new product applications and provide direct technical liaison between the customer and the company.

Supplementing the chain of direct sales offices are twenty manufacturing representative firms which provide direct contact with customers located in areas that are not readily served by Bourns offices. The Trimpot Division also sells through a select group of sixty distributors in key U. S. marketing areas. These well-established distributors maintain extensive stocks of a broad range of products to assure maximum availability and rapid delivery to customers throughout the United States.

In view of the expanding range of products and the growing complexity of electronic systems, the Trimpot and Instrument Divisions have for several years utilized Application Engineering Groups to allow specialization by highly trained sales engineers in certain product lines. This concentration of marketing efforts and responsibilities assures that high level technical support is available to provide prompt solution to customer application problems.

Bourns, Inc. sharply expanded its in-house advertising activities during 1966, to include many functions formerly performed by an outside advertising agency. It is anticipated these organizational changes will result in even more effective domestic and foreign advertising programs. During the past year, the company was the recipient of numerous marketing, brand recognition, and other merit awards which attest to the progressive advertising program and the excellent reputation the company enjoys in the industry.

The highly effective marketing and distribution program of Chicago Aerial Industries, Inc. played a major role in establishing record new orders for all divisions of this Bourns, Inc. subsidiary. As a major supplier of sophisticated aerial reconnaissance systems, the Industries Division continued to maintain extremely close liaison with key military agencies and the major airframe



(1) 1415 Time Domain Reflectometer — Hewlett-Packard. (2) Athena Research Missile, Altitude Control — Honeywell, Inc. (3) Bourns A.G., Zug, Switzerland. (4) CH-47 Chinook — The Boeing Co. (5) Digital Voltmeter/Counter — General Electric Co. (6) Bourns (Trimpot) Ltd. — Edinburgh, Scotland. (7) Bourns (Trimpot) Ltd. — London, England. (8) Bourns (Nederland) N.V. — The Hague, Netherlands. (9) Voltage Regulator for Super DC-8 — Lear-Siegler, Inc. (10) Bourns (Canada) Ltd. — Toronto, Canada. (11) Murata-Bourns Y. K. — Kyoto, Japan.

manufacturers producing reconnaissance aircraft to assure ultimate systems are closely tailored to specified requirements. An extensive field service organization provides technical assistance to operational reconnaissance personnel throughout the world to clearly define operating parameters and assure the highest degree of product performance. The expanded marketing coverage afforded by the New York and Los Angeles offices was very important in the success enjoyed by the Aerial Survey Division, and the concentrated sales efforts of the Pacific Optical Division resulted in a year-end backlog which is only slightly less than the total shipments for 1966.

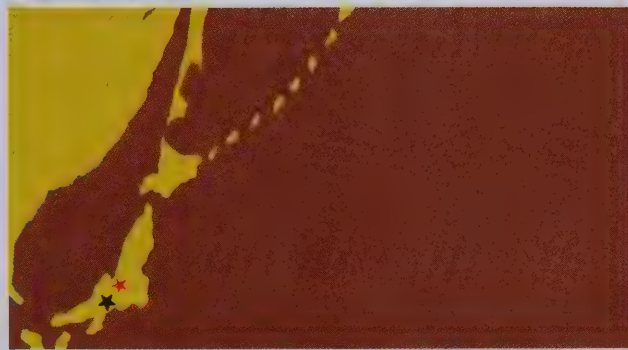
FOREIGN MARKETING PROGRAM

To maximize international coverage and make continued inroads in the growing European electronic markets, the company has established a comprehensive sales network throughout Europe. Bourns AG, the wholly owned Swiss subsidiary, maintains extensive inventories of Bourns products and serves as a focal point for the distribution of these products through numerous major sales representatives who carry inventories in all principal manufacturing centers throughout Western Europe. Two other wholly owned subsidiaries, Bourns (Trimpot) Ltd., in the United Kingdom and Bourns (Nederland) N. V., serving the Benelux countries, provide prompt service and delivery to these highly industrialized markets.

Murata-Bourns, Inc., a Japanese joint venture company, commenced the manufacture and sale of selected Bourns products during 1966. It is anticipated this new organization, supplemented by the established distribution system of Murata Manufacturing Company, will increase the sales of Bourns products throughout the Far East. Bourns (Canada) Ltd., with sales offices in Toronto and Montreal, continues to provide comprehensive marketing and distribution coverage throughout Canada.

Chicago Aerial Industries, Inc. has taken steps to strengthen its international distribution program and achieve greater penetration of foreign markets. Bourns AG in Zug, Switzerland, now serves as the exclusive agent in Europe and CAI has selected sales representatives in Japan, Australia and New Zealand to foster the sale of its products in these countries. This accelerated marketing program resulted in the first major foreign production contract in the history of CAI. This order for electronic night flash systems from a British aviation firm, and numerous inquiries and prototype orders received during the year will form the nucleus for future international expansion.

- MANUFACTURING FACILITY ★
- SUBSIDIARY ★
- FACTORY SALES OFFICE ●
- REPRESENTATIVE ●
- DISTRIBUTOR ○



BOURNS, INC.

CONSOLIDATED STATEMENT

December 31, 1966 with

ASSETS

Current assets:

	1966	1965
Cash	\$ 934,176	\$ 844,091
Trade accounts receivable	9,654,160	6,092,759
Inventories, at cost — not in excess of market:		
Process materials	618,591	384,233
Parts and assemblies, finished and in process	7,445,846	4,852,780
Work in process, less progress payments of \$2,107,013 in 1966 and \$1,048,233 in 1965	2,396,716	1,709,787
Total inventories	<u>10,461,153</u>	<u>6,946,800</u>
Prepaid expenses	<u>302,838</u>	<u>312,853</u>
Total current assets	21,352,327	14,196,503
Investment in unconsolidated subsidiaries, at cost	30,757	4,000
Property, plant and equipment, at cost, less accumulated depreciation and amortization of \$4,607,128 in 1966 and \$3,174,841 in 1965	11,307,890	9,255,181
Other assets	136,055	103,834
Excess of cost of investment in subsidiary over equity in net assets at acquisition (note 1)	1,994,525	1,935,185
	<u>\$34,821,554</u>	<u>\$25,494,703</u>

See accompanying notes to consolidated financial statements.

AND SUBSIDIARIES

OF FINANCIAL CONDITION

comparative figures for 1965

LIABILITIES AND STOCKHOLDERS' EQUITY

	1966	1965
Current liabilities:		
Unsecured notes payable to bank	\$ 3,238,275	\$ 500,000
Mortgage note payable	11,970	—
Accounts payable	2,059,385	1,952,505
Accrued expenses	1,701,567	1,328,440
Federal and foreign income taxes (note 2)	1,385,768	1,058,152
Payable under terms of employee profit sharing and retirement plans (note 3)	1,070,631	939,454
Current maturities of long-term liabilities	800,000	611,970
Total current liabilities	10,267,596	6,390,521
Deferred investment credit	326,265	262,846
Long-term liabilities, less current maturities (note 4)	6,700,000	4,761,970
Minority interest in subsidiary	1,352,248	1,228,086
Stockholders' equity:		
Capital stock, \$0.50 par value per share. Authorized 5,000,000 shares: issued and outstanding 3,179,810 shares (note 5)	1,589,905	1,589,905
Paid-in surplus (note 6)	584,553	473,081
Retained earnings (note 4)	14,000,987	10,788,294
Total stockholders' equity	16,175,445	12,851,280
Contingent liability (note 7):	—	—
	<u>\$34,821,554</u>	<u>\$25,494,703</u>

BOURNS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF EARNINGS AND RETAINED EARNINGS

Year ended December 31, 1966 with comparative figures for 1965

	1966	1965
Net sales	\$53,962,949	\$40,889,087
Cost of sales	<u>34,473,891</u>	<u>25,195,641</u>
	19,489,058	15,693,446
Expenses:		
Engineering, research and development	2,527,463	2,115,964
Selling	3,610,789	2,834,512
General and administrative	<u>6,336,802</u>	<u>5,201,396</u>
	12,475,054	10,151,872
	<u>7,014,004</u>	<u>5,541,574</u>
Other income and expenses (net)	<u>(164,590)</u>	<u>(26,197)</u>
Earnings before provision for Federal and foreign income taxes and minority interest	6,849,414	5,515,377
Provision for Federal and foreign income taxes (note 2)	<u>3,112,781</u>	<u>2,451,141</u>
Net earnings before minority interest	3,736,633	3,064,236
Less minority interest in subsidiary	<u>185,509</u>	<u>179,027</u>
Net earnings	3,551,124	2,885,209
Retained earnings at beginning of year	10,788,294	7,903,085
Less cost of 19,000 shares of Bourns, Inc. stock reacquired and reissued under employees restricted stock option plan	<u>338,431</u>	<u>—</u>
Retained earnings at end of year	<u>\$14,000,987</u>	<u>\$10,788,294</u>

Depreciation and amortization included in above costs and expenses amounted to \$1,457,462 and \$1,241,763 for 1966 and 1965, respectively.

See accompanying notes to consolidated financial statements.

BOURNS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 1966

(1) PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of Bourns, Inc., five wholly-owned subsidiaries, and Chicago Aerial Industries, Inc. from March 1, 1965 (approximately 80% owned at December 31, 1966). The excess of the cost of investment in Chicago Aerial Industries, Inc. over the equity in net assets at the various dates of acquisition aggregated \$2,994,525 of which \$1,000,000 has been allocated to the cost of buildings and is being amortized over a period of 40 years. The balance of the excess, \$1,994,525, is not being amortized. Net assets of four foreign subsidiaries at December 31, 1966 included in the accompanying consolidated balance sheet amounted to \$1,137,730 and net earnings for the year were \$309,737.

(2) FEDERAL AND FOREIGN INCOME TAXES

Federal income tax returns of Bourns, Inc. are presently under review by the Internal Revenue Service for the years 1964 and 1965. Any additional assessments resulting from this review would have no material effect upon the consolidated financial statements. Agreement has been reached with the Internal Revenue Service relative to the Federal income tax returns of the Company's subsidiary, Chicago Aerial Industries, Inc., for the years 1958 through 1962, subject only to final administrative approval. The net assessment has been paid, and all adjustments resulting therefrom have been reflected in the financial statements. Foreign income taxes of subsidiaries are subject to review by applicable government agencies for various periods.

(3) EMPLOYEE PROFIT SHARING AND BENEFIT PLANS

The Company and a subsidiary have Employee Profit Sharing and Benefit Plans providing retirement and termination benefits for eligible employees. In addition, the Company and a foreign subsidiary have a cash profit sharing plan. The Company and its subsidiaries have provided in their accounts \$1,499,445 in 1966 and \$1,277,573 in 1965.

(4) LONG-TERM LIABILITIES

Long-term liabilities consist of the following:

	1966	1965
Unsecured instalment note payable to a bank	\$ 7,000,000	\$ 4,750,000
6½% unsecured instalment note payable in semiannual instalments through 1971	500,000	600,000
Mortgage note payable	—	23,940
	7,500,000	5,373,940
Less current maturities	800,000	611,970
	<u>\$ 6,700,000</u>	<u>\$ 4,761,970</u>

Under the terms of the loan agreement relating to the unsecured instalment note payable to a bank, principal payments are payable in equal semiannual instalments of \$350,000 commencing June 1, 1967. In addition to the aforesaid payments, the Company has agreed that on May 1 of each year commencing May 1, 1968 to pay to the bank for application on the unpaid principal balance a sum equal to 25% of its net profits of the preceding year, less \$700,000 representing principal payments made during the preceding year. Interest is payable quarterly at the rate of ¾% per annum in excess of the bank's prime rate. The loan agreement does not permit the Company to redeem any of its stock or declare or pay any dividends (other than stock dividends) or make any distribution on its capital stock unless the net earnings of the Company for the preceding year is at least twice the amount of such redemption, declaration or payment.

(5) STOCK OPTIONS

At December 31, 1966, certain officers and an employee of Bourns, Inc. held options under the Company's Restricted Stock Option Plan to purchase an aggregate of 4,300 shares of the Company's stock at option prices ranging from \$8.55 to \$14.96 per share. At December 31, 1965, options were outstanding for 23,300 shares of which 19,000 shares were exercised in 1966.

(6) PAID-IN SURPLUS

The changes in paid-in surplus for the year ended December 31, 1966 follows:

Balance, January 1, 1966	\$ 473,081
Add — proceeds received from sale of 19,000 shares of Bourns, Inc. capital stock reacquired, and issued under an employees' restricted stock option plan. Cost of these shares, \$338,431, was charged to retained earnings	142,072
	<u>615,153</u>
Deduct — expenses in connection with listing on the New York Stock Exchange and the Pacific Coast Stock Exchange	30,600
Balance, December 31, 1966	<u>\$ 584,553</u>

(7) CONTINGENT LIABILITY

A suit has been filed against the Company, Chicago Aerial Industries, Inc. and certain of its officers and directors, and former stockholders, seeking money damages for breach of an alleged contract to sell the Company's assets and business. In the opinion of management and legal counsel, the suit against the Company is without merit.

CONSOLIDATED STATEMENT OF SOURCE AND APPLICATION OF FUNDS

Year ended December 31, 1966

Funds provided:

Net earnings for the year	\$ 3,551,124
Charges to earnings for depreciation and amortization, not requiring funds	1,457,462
Funds from earnings for the year	<u>5,008,586</u>
Net increase in long-term liabilities	1,938,030
Other	299,053
	<u>\$ 7,245,669</u>

Funds applied:

Additions to property, plant and equipment, net	\$ 3,510,171
Increase in working capital	3,278,749
Other	456,749
	<u>\$ 7,245,669</u>

ACCOUNTANTS' REPORT

PEAT, MARWICK, MITCHELL & CO.

CERTIFIED PUBLIC ACCOUNTANTS

629 SOUTH SPRING STREET

LOS ANGELES, CALIF. 90014

The Board of Directors
Bourns, Inc.:

We have examined the consolidated balance sheet of Bourns, Inc. and subsidiaries as of December 31, 1966 and the related statement of earnings and retained earnings and the consolidated statement of source and application of funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. It was not practicable to confirm accounts receivable from United States Government departments and agencies by communication with them but we satisfied ourselves as to such accounts by means of other auditing procedures.

In our opinion, the accompanying consolidated balance sheet and consolidated statement of earnings and retained earnings present fairly the financial position of Bourns, Inc. and subsidiaries at December 31, 1966 and the results of their operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Also, in our opinion, the accompanying consolidated statement of source and application of funds presents fairly the information contained therein.

Los Angeles, California
February 7, 1967

Peat, Marwick, Mitchell & Co.

Peat, Marwick, Mitchell & Co.

CONDENSED COMPARATIVE FINANCIAL DATA

TEN YEAR REVIEW (Dollars in Thousands)

	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957
Net Sales	\$53,963	\$40,889	\$22,365	\$19,450	\$21,401	\$14,559	\$11,563	\$9,170	\$5,820	\$4,378
Earnings before Federal taxes	\$ 6,849	\$ 5,515	\$ 4,403	\$ 2,991	\$ 4,181	\$ 2,465	\$ 1,774	\$1,431	\$ 341	\$ 263
Fed. income taxes	\$ 3,113	\$ 2,451	\$ 2,181	\$ 1,523	\$ 2,141	\$ 1,310	\$ 925	\$ 740	\$ 172	\$ 132
Net Earnings	\$ 3,551*	\$ 2,885*	\$ 2,222	\$ 1,468	\$ 2,040	\$ 1,155	\$ 849	\$ 691	\$ 169	\$ 131
Per Share**	\$ 1.12	91¢	70¢	46¢	64¢	36¢	27¢	22¢	5¢	4¢
Per Dollar of Sales	6.6¢	7.1¢	9.9¢	7.5¢	9.5¢	7.9¢	7.3¢	7.5¢	2.9¢	3.0¢
Stockholders' Equity	\$16,175	\$12,851	\$ 9,966	\$ 7,744	\$ 6,302	\$ 4,262	\$ 3,110	\$2,261	\$ 825	\$ 656
Current Assets	\$21,352	\$14,197	\$ 8,581	\$ 7,385	\$ 8,186	\$ 5,147	\$ 4,075	\$3,848	\$1,951	\$1,221
Current Liabilities	\$10,268	\$ 6,391	\$ 3,142	\$ 2,423	\$ 3,631	\$ 2,159	\$ 1,760	\$1,694	\$1,046	\$ 548
Working Capital	\$11,084	\$ 7,806	\$ 5,439	\$ 4,962	\$ 4,555	\$ 2,988	\$ 2,315	\$2,154	\$ 905	\$ 673
Current Ratio	2.1	2.2	2.7	3.0	2.3	2.4	2.3	2.3	1.9	2.2
Employees at year end	4,118	3,214	2,087	1,316	1,915	1,335	1,129	954	777	427

*After Elimination of Minority Interest

**Based on 3,179,810 Shares Outstanding at December 31, 1966





BOURNS, INC.

Corporate Headquarters: Riverside, California

Trimpot Division Plants: Riverside, California; Ames, Iowa

Instrument Division Plant: Riverside, California

Subsidiaries:

Bourns, A.G. Zug, Switzerland

Bourns (Canada) Ltd. Toronto, Canada

Bourns (Nederland) N.V. The Hague, Netherlands

Bourns (Trimpot) Ltd. London, England; Edinburgh, Scotland

Murata-Bourns Y.K.* Kyoto, Japan

Bourns Puerto Rico, Inc. San Juan, Puerto Rico

Chicago Aerial Industries, Inc.

Industries Division.....Barrington, Illinois

Survey Division.....Franklin Park, Illinois

Pacific Optical Division.....Inglewood, California

**A joint venture of Bourns, Inc. and Murata Mfg. Co. Ltd.*